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AGRICULTURAL-FOOD POLICY REVIEW:

Proceedings of Five Food Policy Seminars

U.S. Department of Agriculture / Economics, Statistics, and Cooperatives Service / ESCS-AFPR-2

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PURPOSE OF THE REVIEW

The rational formulation of national policy requires that the issues be delineated and defined, goals and objectives established, policy options developed, and alternative programs specified and evaluated for the contingent economic settings in which they would be likely to operate. In a democratic society, the ultimate choices, presumably reflecting society's wishes, are the responsibility of the elected representatives of the people. Policy development and determination (reaching the point of decision) involves essentially a debating process among adversaries with differing objectives and motivations. Policy research should facilitate this process by helping to improve the quality of the debate. It should provide a context in which to frame and define the problem, help to narrow the focus, rule out the irrelevancies, and narrow the areas of disagreement,

The Economics, Statistics, and Cooperatives Service (ESCS), as a public agency, considers one of its major functions in serving the public interest to be the provision of objective economic studies for use in the policymaking process. A major purpose of this publication is to provide a convenient compilation of objective economic analyses of current policy issues. The background material and research results presented here for use by participants in the policymaking process will hopefully improve the quality of the debate and lead to an improved policy decision process.

In the preparation of these articles, care has been taken to avoid advocacy and implicit conclusions and viewpoints. Any subjectivity remaining is that of the authors and does not represent any official endorsement or position, expressed or implied, of the U.S. Department of Agriculture, or their employing institutions.

PREFACE

Over the past several years, pressures for the development of a national food and nutrition policy have continued to build. The Food and Agriculture Act of 1977 contains major provisions which relate specifically to human nutrition research and food policy analysis. One author recently characterized the present policy setting by saying that "nutritional concerns are moving from an era of neglect and uncertainty to one of debate and action."

Programs of the U.S. Department of Agriculture have been central to the debate. Questions have been raised about the relative ability of the Food Stamp Program to improve the nutritional status of participant households. The effects of program rules on the amount and kind of plate waste in the National School Lunch Program have been questioned by some. Others have asked if the Department's Food Distribution Programs are operated primarily to help support farm income or for the nutritional betterment of recipient diets.

In an attempt to facilitate the provision of information needed to help answer such questions, human nutrition research and food policy analysis have been designated as areas of increasing priority within the Department and its Economics, Statistics, and Cooperatives Service (ESCS). Because of its obvious importance, policy research on issues related to the domestic food assistance programs is being emphasized during fiscal year 1978.

As a part of that effort, a national seminar and invited papers program was held during the early part of the year. Objectives of the program were as follows:

- (a) to identify, describe and discuss the key policy issues relating to USDA's food assistance programs,
- (b) to assess the current stock of research evidence and identify areas where additional work is needed,
- (c) to stimulate interest in food policy research by social scientists, and
- (d) to help establish priorities for the expanded food policy research programs in ESCS.

More than 500 persons participated in the seminars. Twenty-five policy-oriented research papers were presented and discussed. The papers are published in this issue of the *Agricultural-Food Policy Review* in order to broaden their exposure and, in doing so, allow for the greatest possible use in the policy development process.

TOPICS COVERED IN THIS ISSUE

This issue of the *Review* has five major subdivisions. The papers in each subdivision cover a specific problem area. However, the issues are most appropriately thought of as an interrelated set. Obviously, program changes targeted to alter performance in one area will also impact on other related aspects of program operations.

The first set of papers sets the stage for a formal discussion of the contemporary issues in food policy. Each author presents a view of the policy process from their own particular perspective. The overall conclusion, though, coming from these papers is that food policy is bigger than and, in fact, encompasses traditional farm policy considerations.

The relationship between resource transfers through public assistance and the purchase and consumption of food is addressed in the second set of papers. Authors discuss the domestic food assistance programs and their relative effectiveness in providing increased food buying. Whether these programs enhance the nutritional quality of recipient diets is also discussed. The final paper in this section compares the food expenditure consequences of the major food assistance reform proposals.

The third major subdivision of this *Review* contains papers discussing equity aspects of the food assistance programs. While discussions of equity generally relate to the vertical aspects of equity, the papers published here focus attention on horizontal equity issues—the equal treatment of equals. Authors of three papers report on inequities which likely result from current program rules regarding the distribution of benefits. Differences in the costs of living and rules allowing for various deductions from earned income are two of the major reasons given for generating inequitable distributions of aid under present program rules.

Supporting farm income is stated as a major objective of the food assistance programs. It is this tie that binds the food programs and the farm programs. Papers in the fourth section of the *Review* highlight these interrelationships. The lead paper relates food policy to the more traditional concept of farm policy. The author indicates that food policy depends in an important way on the policies and programs which influence farm production directly. Other authors discuss USDA's Commodity Distribution programs and the economic impact of the Food Stamp Program.

The final section contains papers which assess various aspects of food assistance program efficiency and effectiveness. The papers are an indication of how research evidence can be used to suggest changes in program rules. The effect of program rules on participation in the National School Lunch Program is assessed. Another author reviews the process of food stamp redemption and suggests ways of improving the present system of stamp issuance and redemption. The final paper investigates the role of the new budget process in forming food policy—particularly as it relates to new budgetary initiatives. He argues convincingly that the availability of appropriated funds will determine whether major progress will be made on the programs designed to implement a national food policy.

ACKNOWLEDGMENTS

This issue of the *Review* is the product of many people. The authors of the papers have given obvious and tangible pieces of themselves. Not so obvious are the hours of planning and preparation that went into the design and implementation of the seminars and the subsequent publication of these *Review* papers. Thomas A. Stucker, Mike Belongia and Judith Armstrong coordinated a great deal of the effort in planning and conducting the seminars. Frances Yates maintained the mailing lists and responded to the numerous requests for information. Regarding publication, Thomas A. Stucker had primary responsibility for the Food Economics Program Area, National Economic Analysis Division (NEAD), and Judith Armstrong had primary responsibility for the Information Division, ESCS. Patty Kwiatkowski and others in the NEAD Word Processing Unit provided valuable clerical assistance at a time when such resources were extremely scarce. The contributions of numerous others are acknowledged. Finally, we would be remiss if we did not note the support received from Division and Agency level Administrators. When we grew impatient, which was often, they strengthened their determination to bring this project to a successful completion.

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STATEMENT OF PURPOSE

By Kenneth R. Farrell*

The subject of national food policy has received considerable attention in recent years. Some have viewed *food policy* as simply a summation of our *agricultural policies* pertaining to the production and pricing of agricultural commodities. Another view, well articulated by Assistant Secretary Carol Foreman at the recent National Food and Agricultural Outlook Conference, calls for the development of an explicit national *nutrition policy* as a basis for deriving a national *food policy*. The development of a comprehensive, integrated national food policy would, it seems, require meshing both elements, food production and nutrition plus those elements of marketing and regulatory policy that condition competition and performance of our vast food marketing and distribution system. Finally, while we may speak of a national food policy, it should be clear that such policy must be conditioned by and linked with the international dimensions of food production, trade, and aid.

Although the boundaries of a comprehensive, integrated national food policy may be generally evident, the construction of such a policy is far from complete. In fact, it has barely begun. Despite large public investments in research, the interrelations between food production, food marketing, food consumption, and human nutrition are not well identified or understood today. We have not well identified the linkages and tradeoffs among subsets of those elements of a comprehensive, integrated national food policy. Several factors explain that state of affairs.

First, there remain serious voids in our knowledge base from which a national food policy might be constructed. For example, we know less than we should concerning the nutritional status of our population and the complex interaction of socioeconomic variables which determine food consumption and the nutritional status in the population. We know much less than we should concerning the role food marketing institutions and the impact of mass merchandising of differentiated, often highly advertised, food products have in shaping food consumption and human nutrition. We have serious voids in our knowledge of the relationships between human health and nutrition and the use of chemicals in the production and distribution of food.

Second, much of our research which bears upon the major elements of national food policy has been along

single disciplinary lines whereas many of the issues are interdisciplinary in nature, particularly when placed in a policy context.

Third, policy analysts in the agricultural research establishments have focused primarily upon agricultural commodity price and income policy issues and to a lesser degree upon commodity marketing policy. I have seen several symposia and conferences labeled as discussion of *food* and *agricultural* policy degenerate to singular discussion of conventional agricultural policy issues. When there is so little of our research and policy analysis which gets beyond the "farm gate," we should not be surprised or indignant that legislators have not yet developed comprehensive, integrated food policy legislation.

We believe the time has come to broaden our agenda in ESCS and more generally in the Department to grapple more effectively with the complex issues related to food, human nutrition, and related policy issues. In fact, we are required to do so by passage of the Food and Agriculture Act of 1977. The act designates USDA as the "lead agency" in the Federal government for the food and agricultural sciences. Human nutrition research is indicated as an area of emphasis and a new \$5 million competitive grants program for work in this area is authorized by the Act.



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In ESCS we have a small group of analysts conducting research on the impacts of policy interventions at the *food consumption* end of the spectrum. Another group is beginning to bring into focus policy-oriented research related to *marketing and distribution* of food. In that work we are linked closely to the NC-117 regional project headquartered at the University of Wisconsin focusing upon issues related to the structure, organization, and control of the food and fiber sector with emphasis on legal-economic issues related to food processing and retailing. A third group of analysts focuses upon the more conventional *agricultural commodity policy* research. Finally, we have a division of the agency concerning itself with international trade, competition and development in *food and agriculture in a world context*.

While we in ESCS have elements of a research program to address some of the economic dimensions of food and human nutrition and food policy issues I referred to at the outset, we are understaffed relative to the research which is needed. Further, we must reach out more than we have in the past to establish cooperative research programs with persons elsewhere in the research community including those in other disciplines. Thus, the role of ESCS and the Department as a whole will be evolutionary. A period of open discussion and dialogue, problem identification and research orientation seems to us to be a necessary first step.

Hence, the initiation of this seminar series on food policy. Five such seminars will be held over the next few months—each focusing attention on a somewhat unique researchable aspect of the national food policy question. Each of the half-day sessions will feature a major issue paper and a set of research reports which will indicate in a rather specific way the types of studies now underway relevant to the topic being discussed. Seminar participants at each session will be encouraged to interact with each other and the program speakers.

Today we want to paint with a rather broad brush upon the very large canvas we have described as food and human nutrition and related food policy issues. While the canvas at the end of the day may not contain much of the detail of that which we hope will ultimately emerge we hope the discussion will provide, at least in bold relief, a foundation upon which subsequent seminars will build.

The seminar sessions planned for the near future will be food-program oriented. That is, they will be forums for discussion of major policy issues which relate to the operation of USDA's domestic food assistance programs. This initial orientation was planned for two reasons. First, these programs are tangible manifestations of important elements of domestic food policy. Over two-thirds of USDA's budget is related in some way to the operation of these programs. Secondly, with welfare reform (and potentially "cashing-out" the food stamp program) as a certain policy agenda item, there is a rather pressing need for the presentation and subsequent discussion of the research evidence which indicated whether causal relationships exist between food programs and food purchasing, nutritional intake, and the food system.

Richard Nathan from Brookings Institution is scheduled to deliver the major issue paper at the next session. Its focus will be on the food purchasing implications of alternative income transfer schemes (i.e., in-kind aid vs. cash assistance). Peter Timmer (Harvard University) is scheduled to lead a seminar in mid-January addressing the horizontal equity aspects of food assistance program rules. Ken Robinson (Cornell University) has agreed to help us think through the interrelationships between the food programs and the food system, including the farm programs. That session will be held in early February. Finally, Steve Hiemstra (FNS, USDA) will deliver the major paper at the session designed to explore the economic consequences of various program operations. That session is scheduled for mid-March.

If interest in the first five seminars indicates a need, additional seminars on human nutrition and food policy topics will be planned. In fact, we are already discussing future sessions, based on comments from many of you, to discuss such topics as the nutrition related influences of food processing and retailing (including food system market concentration), farm production incentives, and international assistance programs.

Your role, we hope, will be an active one and not that of a passive listener. Each of you has been invited because we believe you have a contribution to make. We hope you will get acquainted.

FOOD POLICY ANALYSIS IN THE U.S. DEPARTMENT OF AGRICULTURE

By Howard W. Hjort*

ABSTRACT

In considering food policy, it must be recognized that the food system functions as a system—a shock to one part impacts on the rest of it. Also, our food system is part of the world food system. Because our system relies heavily on market prices as the equilibrator between supply and demand, it is subject to greater shocks than most other national food systems. The food policy area has thus developed to embrace a broad, complex policy process. Implications are that more demands for information and analyses will be made, and that research analysis must be multidisciplinary.

KEYWORDS: Food policy, economic analyses, public participation.

We consider this activity—these seminars—to be highly important—more useful for us in the Department of Agriculture (USDA) than for those of you who are here to help us. First, we hope to gain a deeper understanding of the policy issues—particularly the food policy issues—that will have to be confronted over the next few years; and next, we hope this understanding will help structure the analytic and research program that will be needed to provide a firm foundation for the resolution of those issues. What I want to do here is to consider with you a framework for food policy analysis from my vantage point in USDA. I want to begin with a series of general criteria.

THE POLICY CONSIDERATIONS

First, we have to recognize that the food system is a system. A shock to any part of that system impacts the rest of it, and, as analysts, we must recognize that and be able to trace those impacts.

Second, our food system is part of the world food system. A significant event anywhere in the world impacts upon our own system.

Third, our system is more “open” than that of most other countries. We rely more heavily upon market prices as the equilibrator between supply and demand, which means our system is subject to greater shocks than most other national food systems. Ask anyone and they will

remember the 1973-74 food price spiral or they will be aware of the current situation.

Fourth, the world continues to become increasingly dependent upon the United States as a source of food. The trend lines on that are abundantly clear.

Fifth, there is instability in world food production with weather, a noncontrollable factor, the greatest source of year-to-year variability.



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COMPLEXITY OF AGRICULTURAL AND FOOD POLICYMAKING

The food and agriculture policymaking process today is highly, if not incredibly, complex. There are several reasons for that. First, consider a series of external reasons.

A decade ago food policy wasn't terribly important; farm policy dominated the agenda. We were in a situation of excess supplies, and the Government owned major commodity stocks. They were a buffer against short-term changes in supply and demand.

As I said, farm policies were important at that time, not food policies. The policy process was comparatively simple and uncomplicated. The dominant policy was protection of commodity prices and farm income.

Today that is not the situation. As I previously indicated, today our food and agricultural policy must be pursued and formulated in a world context. We are tied to the world, whether we want to be or not. We must recognize that. The scope of food policy today includes farm income, farm prices, consumer food prices and expenditures, U.S. balance of payments, domestic inflation, domestic employment, Government program expenditures and so on. But it doesn't stop there. We go on to environmental concerns, food quality and safety concerns, nutritional concerns, quality of life, and economic opportunities in rural America.

It is quite valid for these segments of our society to be concerned and to provide input into policy formulation because food and agricultural policies do affect every segment of our society. Our public is one of the most diverse. Balanced policies must be achieved to address these many viewpoints.

The second major component which contributes to the complexity of the policymaking analytic process is internal. General public concern over food policies has generated a heightened awareness throughout Government agencies, and a renewed interest in socioeconomic analysis.

Remember, for a moment, the sharp escalation in prices in the early seventies. This captured the attention of policy officials. One consequence was the Cost of Living Council which came into being in 1971; there was a major shift in responsibility for the policy agenda with respect to food and agricultural matters. Today, the Departments of State and Treasury, the Office of Management and Budget, the Council of Economic Advisers, the Domestic Policy Staff, all continue to be deeply involved in policy formulation and analysis. There are budget concerns. But just as important are the long-range implications of commodity support programs, and international agreements, food aid, and assistance.

The openness of the policy process today is also somewhat different than it was 10 years ago. But I, for one, see this broader participation as healthy. It is an opportunity for all of us to open new lines of communication to better serve the public.

Another part of the increasing complexity of the process is the result of changes in the Congress of which I will mention two aspects. A few years ago—not too many—farm and food policies were primarily the responsibility and concern of a relatively few bipartisan Mid-western and Southern Congressmen and the major farm organizations.

Today, food and agricultural policies remain the concern of a decreasing number of primary agricultural interests, but one has to add to that decreasing constituency a basically urban voice.

Concerns of the Congress are also more evident in listing the additions to the system that Congress works through. The Congressional Budget Office, House and Senate Budget Committees, the expansion in the General Accounting Office—all of these add to the analytic process. Economic analyses for the Congress were begun so that the Members could be more informed in their decisionmaking in the food and agricultural area as well as other areas. The legislative process today is also much more open than at any time in the past.

The final component which I will mention in contributing to the complexity of policymaking is the increased importance of the judiciary. Many of you have heard me say that, for some reason, in this society we have decided the courts are the appropriate place to resolve conflicting socioeconomic questions. And I, for one, question if they are the most appropriate forum.

As food policy analysts, we have to contribute to the analytic process because, in my view, that is the way to escape from continued litigation in the courts. The reason we find ourselves in the courts is because we fail to provide adequate rationale—economic, social, and political—for the things that we do in the name of the public.

IMPLICATIONS

What are the implications of this more complex, broader policy process? One obviously is that all levels of Government will continue to seek more economic information and analyses. The people will continue to demand more. Tied to these demands for concise information is the fact that we are being held more clearly accountable for our work—to Government and to the general public. Another implication is that our analyses must be more comprehensive than ever before. It is not adequate to examine the impact of our proposed policy, to adjust to commodity price support, by looking only at the effects on prices and income for that commodity's producers.

Information should also be available on the distribution of benefits to producers geographically and by size of farming operation. We must know something about the impact of that proposed change on the structure of the industry and its impact on consumers—here and abroad—and upon our taxpayers.

We must also analyze the effects on the quality of the environment, on our natural resources, domestic employment, and other international trade issues.

Another implication is that our policy analysis must be multidisciplinary. We have to ask ourselves if economists are equipped to do the job. Our methods and models must be capable of effectively incorporating large numbers of variables and resultant tradeoffs. Farms are changing rapidly and the means for analyses are increasing.

If I can speak personally for a moment, I have felt that several of our analytic models fail to adequately incorporate or explain the behavior of the world commodity market in 1972-75. I believe that some analyses are based upon antiquated functional relationships. Many of the analyses fail to incorporate in a necessary and satisfactory way variables such as weather, exchange rates, and macroeconomic variables. I find many of our analyses so partial that they are of little value in dealing with the complex, interdependent set of relationships that we are confronted with. There are even times when I feel that we have abandoned economic logic and good judgement to the determinism of statistics and econometrics.

Once last spring, in connection with the Administration's proposal to eliminate the purchase requirement for food stamps, we searched through 32 food stamp related studies conducted in universities, the private sector, and Government, and we were unable to find reliable estimates of the effect of that modification on consumers or producers.

Concerning international trade, analyses of production-supply response in foreign countries, the linkage of domestic and world market variables, basic analyses of bilateral and multilateral commodity arrangements—that whole series—I find it from a research standpoint to be a terribly thin base to build the policies that we are asked to build today.

We need more analyses of environmental-agricultural production tradeoffs, as well as analyses of secondary environmental impacts of food and fiber production activities.

We find ourselves in a system where we are engaged in what I will call microanalysis. We look at this additive today. We look at another additive the next day. We look at one pesticide 2 years ago and another one today, and so on.

Each time we look at the impact of that particular pesticide or that particular additive, I am fearful that nobody is keeping score. The macro impact of a series of micro changes probably is greater than the sum of the parts, and I am sure that we are not keeping track of the sum of the parts.

Another aspect that we are going to have to be alert to as we look into the future is the fact that the situation today is one in which the cost of processing, packaging and transporting, wholesale advertising and retailing is likely to continue to rise.

Costs of all the things that are done to a commodity after it leaves the farmer's hands are increasing at a 6½ to 7 percent annual rate. It is highly unlikely in my view that we can expect the rise to be less than 5 to 7 percent.

There was a time—the 25 years at the end of the second World War until the early seventies or thereabout—when the real value of U.S. farm-produced foods continued to decline. There is little reason to believe such a decline will occur in the future, at least to the same degree. A more likely prospect is continued increases in farmers' cost to produce food.

Why? There are several reasons. Relatively few farmers remain. We cannot expect the kind of movement out of agriculture that we have had in the past. Energy costs—I expect they will continue to rise, don't you? Fertilizer costs are more likely to rise than decline. Taxes—I expect they will increase. Wage rates—I don't imagine they will go down. Machinery prices—I imagine because wage rates and materials and so on will go up, they will go up. Repairs, I think, will cost more. Pesticides, I suspect, will be increasingly restricted, and those available will cost more per unit of output. Feed additives will be increasingly restricted, and those remaining will cost more per unit of output. Water will become more expensive. Separation of ownership and operation will continue, which I think will lead to higher costs per unit of output.

There are several things here that suggest the need for analyses and research, but it does seem to me that we will be looking at something different in the future than we have become accustomed to in the past. Over time, our producers must have a return that covers cost of production. Farm policies and programs will have to recognize that fact. This does not mean that farm programs must *guarantee* a return equal to cost of production for *all* farmers, nor even guarantee average costs. But it does mean that there will be times when the returns to farmers are above costs and other times below, as they are now, as long as current policies are followed.

There is a choice. One can have a regulated agriculture, but I don't know of any farm group that really wants that. Food costs, then, I suspect, will continue to escalate. I think it is best to recognize this as given with the relative question being the pace of the gain.

We will face increased pressure to minimize the rate of increasing food costs, and the consequences of this must be fully explored, both from a domestic and an international perspective. It is one thing to provide food assistance when supplies are excessive and farm prices low, another to do so when food costs are escalating relatively rapidly, even if the producing sector is in a recession or a depression.

This year, 1977, provides an example of the increasing contradiction in which we find ourselves. Farm prices are down 1 percent from those in November 1976. Food prices at retail are up about 6 percent from those in November 1976. The average value of farm-produced food is \$56 billion. In 1976, it was \$56.3 billion. Expenditures at retail and in restaurants for that \$56 billion

of food are \$180 billion in 1977, up \$8 billion from 1976 figures. Aggregate farm income in 1977 will be below that of 1976 in real terms, while aggregate non-farm income will be higher in 1977 than the year before.

As one can see, economic information and analyses are much sought after products in the policymaking process.

TASKS AHEAD

To conclude, I want us to consider some broad challenges. I see a major need to embrace the new constituency concerned with food and fiber policy with the same enthusiasm which characterizes our approach to traditional clients. We must bring the traditional clients a better understanding of the legitimate interests of our broader constituency, and, at the same time, make it clear to our new clients that we can be of service to them.

We also face the challenge to build better knowledge bases for dealing with complex agricultural and food policy issues and to internalize into the research agenda and analytic models new variables which have traditionally been considered to be external.

Another broad challenge is to substantially increase our ability to develop current information systems on domestic and international markets. The events of 1972-74 underscore the high price of having to make policy decisions without full information on current developments and realities and the likely course of future events.

We must be aware of the need for increased realism in modeling and research and for the importance of objectivity and creditability along with that realism. Objectivity and creditability relate not only to how we conduct a piece of research but also how we select what becomes a research priority.

I at times have found a very disturbing tendency wherein I detect that a piece of information has been biased in a certain direction in anticipation that this may be the outcome that someone would like to see. If I provide biased information, I cannot serve a useful purpose in my position. I can only handle objective, straightforward research.

I would like to close by just ticking off a list of things that should be on the agenda. Let us run through some headlines that have been in the news recently. I basically feel that we are inadequately prepared from an analytic or research standpoint to wrestle seriously with most of these concerns:

- Farmers plan to strike for full parity prices.
- Farm prices are down this year.
- Food prices increase.
- P.L. 480 food assistance and the human rights debate.
- World hunger exists despite excess supplies and depressed prices.
- The balance of trade concerning the food and agricultural account is positive at \$10.5 billion.
- Value of food exports record high, but so are imports and net declines.
- Energy crisis boosts costs of food, and slows rate of growth in world consumption requirements.
- Controversy surrounds nutrition goals.
- Nitrate and nitrite threat to human health.
- Feed additives under attack; use of penicillin, tetracyclines, and sulfa drugs being questioned.
- Pesticides unsafe.
- Sheepmen complain that coyotes are ruining their industry.
- Inspection officials plead guilty.
- Restraint of trade charged in oranges and milk.
- Water table declines—ground water being used faster than it is replaced.
- Prime farmlands become shopping centers, housing developments, and interstate highways.
- Fraud in domestic food programs.
- Decline in beef cattle inventory over past 4 years largest ever.
- Tissue in meat.
- Meat imports cause distressed prices in beef industry.
- Budget outlays for food and farm programs record high in 1978.

It is not our responsibility to dictate social or political objectives. However, given the goals and objectives voiced through the political process, food policy analysts can identify and evaluate the economics of options for achieving those objectives. We have a responsibility to influence the policy agenda by conducting good research and communicating the results in a way which brings significant economic issues to the public's attention. Finally, innovativeness and creativity are vital in policy analysis.

We have honed to scientific precision the concept of allocation of scarce resources to competing ends. But we have only begun to apply that concept to the task of bringing our scarce resources to most effectively bear on the real and competing economic problems confronting our society.

THE EMERGING CONCERN FOR HUMAN NUTRITION AND WORLD HUNGER

By Sol Chafkin*

ABSTRACT

Human nutrition has become a "growth industry." However, the danger exists that this expanded activity will not generate much beyond lists of research topics. Internationally, nutrition programs must fit into the countries' budget considerations, and domestic intervention programs are much easier to implement than broad policy changes. The question for the near future, assuming a programmatic approach to problems of hunger and malnutrition, is the choice between protecting farm income and retarding price increases to consumers.

KEYWORDS: Human nutrition, world hunger, food policy.

We talk a great deal about food policy research and the use of such research evidence to change food policy. And I am afraid that is where we may wind up—talking a great deal. If one considers the remaining seminar topics, it is clear that they are, in one way or another, concerned with programs, not policy. I am not being critical in the sense that it is a bad choice of topics, but I think it indicates how much easier it is to adopt programs and conduct policy research than it is to actually *change* policy. So my theme is that it is not clear to me how much food policy research will contribute after the knowledge gaps are filled. The reasons for the limits and constraints on actually using the results of food policy research will be highlighted in this article. First, let me note a number of things quickly to bring us up to date on recent events in the world and in this country that involve nutrition.

A BRIEF HISTORY

At this seminar, we have a somewhat modest indicator of how much of a growth industry human nutrition and world hunger activity has become. Much has happened over the past 3 years. The world food conference in Rome devoted unprecedented attention to problems of malnutrition, and conferees recommended an ambitious program of planning, research, education, and intervention programs for poor countries. The World Food Coun-

cil was set up to eradicate hunger and malnutrition. New institutional arrangements of various kinds have been created within the United States to upgrade the attention given to nutrition. The World Bank has embarked on a rather courageous lending program for nutrition components in other projects. The United Nations University has launched a training and research program on world hunger and malnutrition.

In this country, a couple of years ago, an advocacy group won a Federal court case against the Department of



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Agriculture arguing that food stamp allotments had to be increased to meet the nutritional requirements recommended by the National Academy of Sciences. It is an extraordinary situation in which scientific issues are quite murky and are being settled in court.

Also, the National Academy of Sciences published in June 1977, after much study, a report on food and nutrition research needs. That report, *The World Food and Nutrition Study*, spawned a series of supporting papers on nutrition policy. I recommend both the overall report and the supporting papers for your reading.

What else has happened?

U.S. Congressional committees that previously never paid attention to the subject of hunger and nutrition have been conducting hearings on what the U.S. Government should be doing about nutrition. For perhaps the first time in White House history, a member of the White House staff has been assigned specific and continuing responsibility to advise the President on national and international nutrition and hunger issues. This appointment has led to the naming of a White House Task Force on World Hunger.

Nutrition research budgets are getting new looks in the Department of Agriculture and, I assume, in the Department of Health, Education and Welfare and perhaps in other agencies. Most of them are in the direction of seeking increases in research funds in the years ahead. I commend this activity.

There have grown up in the period of 3 years, scores, if not hundreds, of citizens' groups across the country concerned with everything from world hunger to the effects of food additives in American diets. This growth may turn out to be the most significant event in the country in the last 3 years. Also, the U.S. Food for Peace Program has become increasingly oriented toward nutrition objectives.

The list can go on. My point is that there is much going on. I suggest we keep an eye on it, because, and perhaps I am the pessimist in this group, I have some serious doubts that this activity will generate much more than lists of research topics. I am afraid that relatively little will be done in the way of significant changes about how decisions are made concerning those policies affecting what goes into the mouths of people, or what does not.

These expressions of concern could be characterized in this country as what we eat, what it costs, and how it affects our health. But the concern is directly linked to a whole series of recent crises and near crises which you all recall: the oil price explosion, the food price explosion, the crop failures, population growth rates, inflation, unemployment, exchange rate instability, volatile grain exports, and consumer worries about health and diet. All of these have generated rather recent public and private concerns about the U.S. food system and its adequacy.

In the past 3 or 4 years, unprecedented attention has been given to malnutrition in the world and to the consequences of malnutrition. Since I am trying to give us some kind of a setting in which to have a discussion, it

might be worth noting one or two things which seem to me worth recalling.

A PERSPECTIVE ON NUTRITION

Malnutrition in a sense is a panhuman phenomenon of immense importance. In poor countries, there may be as many as a billion people who do not get enough to eat. In the United States, not only are there many people who do not get enough to eat, but there are also millions who are so overweight that their health and lives are threatened.

Authors of the *World Food and Nutrition Study* of the National Academy of Sciences summed up the concern as follows:

Nutrient deficiencies that cause widespread disease and debilitation chronically affect far more people and cause greater cumulative damage than outright starvation. Malnutrition shortens life expectancy. Acute and chronic infections and anemia reduce work output and induce debility. This loss of vitality undermines a person's capacity to savor life and the human condition is degraded.

That report, I think it would be fair to say, is tilted toward the poor countries. So it is useful, perhaps, to point out that a change has taken place in the view about malnutrition. Until recently, malnutrition was regarded by most people in the United States as something that existed in other countries. That view has changed.

Dr. Philip Lee, a year or so ago, made the following statement before the McGovern subcommittee on nutrition and human needs. It assesses the significance of malnutrition here in the United States:

The United States is trailing behind 14 other nations in the prevention of infant mortality. Analysts at the National Institute of Child Health and Human Development are convinced that a key reason for our dismal showing in this area is our high incidence of low birth weight infants—babies that are born too soon or too small to cope with the demands of life outside the womb. Of the more than 3 million children born in the United States each year, 7.6 percent, or about 240,000 will weigh less than 5½ pounds at birth. More than 40,000 of these low birth weight infants will die in their first month of life, thereby contributing 70 percent of the 53,000 infant deaths that occur annually. And the 200,000 low birth weight babies who survived beyond infancy will suffer a disproportionate incidence of handicaps in later life.

The women who run the risk of giving birth to small babies, not surprisingly, are the

very young, the poor, and the black—the same women who have always had the greatest difficulty in obtaining adequate medical, emotional, and economic support during their pregnancies. Given the present rate of death and disability among infants born in this country, it seems that we can hardly afford to ignore any reasonable opportunity for prevention. Nutritional programs aimed at pregnant women represent a national obligation to the youngest and most vulnerable members of our society.

There is much more in Dr. Lee's statement, concerning malnourished elderly Americans and the relationship between poor nutrition and how our brains and bodies function. I recommend it to you for reading.

We have become accustomed to worrying about what we eat, how much it costs, and how it affects our health. We buy and read a lot of books on the subject. There's a great deal of uncertainty in this country, fed to some extent by faddism and claims from a wide range of experts and those not so expert.

THE POLICY PROBLEM

Overseas governments tend to respond rather rapidly to threats of famine. They move food to those who need it when they have it. But they respond with less certainty and decisiveness to situations of chronic hunger but less than severe malnutrition. And it is in this context that policy issues affecting world responses regarding malnutrition need some clarification.

An immensely larger number of people suffer from less than severe malnutrition than those who are suffering from severe malnutrition. And it is probably a factor of 10; 10 times as many people are in some kind of nutritional risk situation but do not display the visible signs of severe malnutrition.

We know very little about what that means, either in poor countries or in the United States. Even if we knew what it meant—and there are a good many guesses and some evidence about the relationship between inadequate nutrition and human functional performance—even if we knew those relationships, it is not at all clear that, having established the importance of adequate nutrition, action would be taken.

For example, let us suppose that the relationship between inadequate malnutrition and human functional performance became clear. That is, suppose we knew inadequate nutrition might contribute to failure to learn, failure to cope, failure to resist disease, reproductive competence problems, work performance and so on. One would think then, that we could adopt policies in this country that stabilize the prices of key foods for consumers.

What we find here and in many other countries, however, is a failure to face up to, let alone harmonize, con-

flicting objectives. In the United States, for example, we want to provide adequate income for farmers through the price mechanism, and we also would like to see lower prices for consumers.

The Secretary of Agriculture was quoted in the *New York Times* over the weekend as saying that maybe what we ought to do is start out with some nutrition research that will tell us what our nutrition objectives ought to be and then build a food policy around that. It is astounding to have this possibility even raised. I don't think it could have happened a year ago. Making the linkage between food policy and nutrition objectives and opening the possibility of building a food policy from a set of nutrition objectives is quite an achievement.

I applaud the Secretary in opening up that possibility. But the recent crop adjustment decisions—the restrictions on acreage announced over the past 2 or 3 months—are about as clear and as classic an example of what's important as I can find. It is really more important in this country, at this time, to protect the economic position of the farmers than to worry about the nutritional implications of slightly higher food prices.

The first caution about food policy research then is that after you get the research done and you've filled in the gaps, you have not necessarily solved the problem of what your priorities are in this society. At this time and in this country, the farmers' economic position is accorded a higher priority than are the possibly adverse effects on nutrition of acreage restrictions. In the same sense, it seems to me that, and this is true in all countries, the chronic balance-of-payments problems are likely to take a higher priority and receive more attention than are nutrition objectives.

Again, perhaps a classic illustration is the situation in Brazil. I looked up the numbers about a year or so ago. There was virtually no increase in the volume of traditional staple foods produced there for 11 years, ending in 1975. But an explosive increase occurred in the production of soybeans in that 11-year period from about 500,000 tons per year to close to 10 million tons. Brazil had to service its foreign debt. It had to worry about its balance of payments. And these simply took priority over domestically consumed food products and the need to expand production.

So there is a kind of iron law that supersedes attention to nutrition which one might call the "iron law of international financial survival." In the same sense, if National budgets have to be cut, the chances are that nutrition programs will be cut before other programs which are given a higher priority.

THE SEARCH FOR SOLUTIONS

It is constructive, I think, to look at the solutions that the World Food and Nutrition Study offers to the prob-

lem of world hunger and improvement of nutrition. These include:

- Increasing food production in developing countries by about 3 to 4 percent per year,
- Reducing poverty through development programs to foster overall growth,
- Achieving a more equitable distribution of income,
- Developing a set of policies to integrate expansion of output, employment, and food supply,
- Initiating direct food distribution programs,
- Stabilizing food supply by national and international food reserves,
- Improving food marketing assistance,
- Instituting population control programs, and
- Conducting more and better basic and applied research.

These solutions entail such complex policies that, in most countries, changing them could likely not be done without some kind of revolution. It would require a basic reordering of priorities and power, particularly those involving income redistribution. This is the kind of list one lays out to be sure that one touches all the bases. I don't know how practical it is.

On the other hand, we are often told that the models we should pay attention to—that is, the models of governments that have reportedly solved their health and nutrition problems—are China, Cuba, and North Vietnam. The point here perhaps, is that the philosophy of government may be more important than any of the other factors that affect food consumption in the country.

Broad policy changes are attractive because they are clean—that is, people adjust an exchange rate or they set up a subsidy on one key food. Such changes are attractive because they do not require cumbersome administrative structures as programs do. However, food intervention programs require hiring people and buying trucks and using pieces of paper and vouchers, much unlike the type of solution that can be administered through an exchange rate mechanism.

The broad change is then quite attractive when it is simple and clean. But when the subject is a total food system and all the related interdependencies, a government is asked to make many changes. Thus, several new policies have to be adopted at the same time. And here is where a certain amount of political trouble occurs. It is a lot to expect the government—any government—to make more than one policy change at a time. It is particularly true of political leaders who generally do not like surprises. When people start fiddling with a set of policies, inadvertent fallout often results in surprises. What is worse, the surprise may unintentionally gore somebody's ox.

Political leaders then can be expected to look at intervention programs rather than basic policy changes. It is true that intervention programs, as distinct from policy, are cumbersome and are sometimes fraught with scandal. But that kind of risk is more acceptable politically than a basic policy change because somebody can always be fired or the program can be started small (and called a

pilot). If it doesn't work, it can be dropped quietly. If the program does work, it can be pointed to, and we can get the names and addresses of the people who receive help from it. That kind of program has a life to it and, at least, an alleged controllability that fiddling with policies does not have.

Most of the food intervention programs in the United States and in developing countries, I would say, are based on social equity considerations and regarded as income supplements rather than being based on nutritional considerations or specific health objectives or specific human functional performance objectives. If we don't know, and we know very little, about the relationship between food intake and function, then any intervention to increase intake by any amount is appropriate.

The theory is that more is better, and every little bit helps. So if governments can get by with a little bit, both in policies made and money spent, they try to do that. Since nobody knows the results they try to get away with as little as possible. The social equity justification for an intervention program is subject to change, depending on which Administration is in power and what its view of equity is.

On the other hand, an argument for intervention programs based on specific functional consequences flowing from inadequate diet, in many respects, powerfully reinforces the equity justification. In some sense we have to decide on our primary concern. If our primary concern is the ability of people to learn and work productively to maintain health, to cope, the question that must be addressed is the extent to which these human functions are related to food and nutrient intake or to nutritional status. If the function is impaired, that is the performance, we must ask how much of the problem would be solved by increased income, by direct food delivery, by changing individual or household food behavior.

Direct feeding programs are often undertaken in the belief that such direct intervention will result in a significant net increase in the consumption of nutrients by the person being fed or receiving food packets or food stamps. Relatively little is known about the extent to which such food deliveries are simply substitutes for household expenditures. The nutritional effects of distributing food to infants or children are often diluted because the food goes into the family pot and is fed to other children, or all the children, or all the adults. The complexities and uncertainties associated with diagnosing and dealing with hunger and malnutrition require facing the question of why one should bother with research of the kind proposed in the World Food and Nutrition Study and by other national and international institutions.

WHY CONDUCT RESEARCH?

Why don't we simply concentrate on getting some food to people who are obviously suffering from severe

malnutrition? We don't need all that research. We can see the people who need the food. Since I have participated in recommending rather ambitious research agendas, the question has troubled me a good deal. I've tried to work my way out of the dilemma on the following basis.

The severity of malnutrition is a continuum and, in effect, those who are moderately malnourished today, especially children, can be tipped into severe malnutrition next week after an episode of infection. The number of malnourished who do not display clinical symptoms of severe malnutrition is much larger than the number of people who do. Thus, we must begin to pay more attention to those with less than severe malnutrition.

We do not know the consequences of these lesser grades of undernutrition or, indeed, of overnutrition. If we choose not to learn the consequences, we will be accepting high risks about the kind of world we will have in future generations.

The types of research questions that the U.S. Department of Agriculture has formulated, I think, are worth restating as I close. What do persons need nutritionally for optimal growth, functional performance, and continued well-being? Second, what are people actually eating and how does this affect their nutritional health? Third, what factors actually shape people's eating habits? Fourth, what happens to our food from its origins on the farm until we eat it? And how do all the steps in between affect the safety, quality, and nutritional value of our diets? Fifth,

how do government intervention and nutrition education affect the health, nutritional status, and performance of the people they are intended for? Sixth, what are the nutritional effects (and here we get into the policy questions) of agricultural and other U.S. Government policies and regulatory programs? And seventh, what special considerations are needed in helping to meet the dietary needs of people in other countries?

Intervention programs need not wait for all the research to be completed. The chances are that such programs may turn out to represent one of the most important ways of generating answers to some of these research questions. Some of these problems may not be solvable through intervention. Those that are, deserve intervention.

We will, for several years ahead, be relying on some kind of food delivery system or food stamp delivery system or some kind of programmatic approach to problems of hunger and malnutrition. The fight for basic changes in policy thus continues. We will only begin to see the significance of that fight when we are able to choose between high farm prices to protect farm income and retarding the increase in prices for consumers. The process of fleshing out the choices among alternative agricultural policies is just now beginning. The effectiveness of the attention given now to prices will be measured by the intensity and the extent of the public debate.

IMPLICATIONS FOR DOMESTIC POLICY

By Lynn Daft*

ABSTRACT

General agreement exists that world hunger is a very important issue and that our current programs and policies need improvement. The Administration is outlining the major issues and collecting information for use in policy decisions. Nutrition is perceived to be an important issue, and the resultant political pressure has put nutritional issues on the policymaking agenda. An institutional framework suitable for consideration of food and nutrition policy issues exists in the Department of Agriculture, but adaptations will be required if changing needs for research and analysis are to be met.

KEYWORDS: World hunger, domestic food policy, nutrition policy.

My purpose is to share with you three or four of the thoughts I have about the setting within which I see food policy. But first, I want to make a few introductory comments.

This article represents only one man's judgements about the policy setting. Those of you who know me know that I am not involved in nutrition policy in a major way (at least not to the point that I am confused about the facts). This subject area is mostly new to me and you need to bear that in mind as you think about what I have to say.

In this article I address three major topics. I look at world hunger briefly, and following that, human nutrition. In that regard, I will raise a few questions: Is human nutrition really an important issue? Second, from the standpoint of the overall domestic policy environment, what are some important characteristics that will shape the tone and substance of that policy as it evolves over time? As my third major topic, I will conclude by examining a few of the institutional considerations.

WORLD HUNGER

I must confess that I was a little confused that world hunger and nutrition were combined as topics in this seminar. As I look at the topics for later seminars, I see this is perhaps the only time that the world hunger or the inter-national perspective will be a major focus. It is prob-

ably appropriate to make that separation. If I were doing it, I would separate domestic food policy from world hunger policy, although I agree there are a lot of important interrelationships that need to be continually reexamined. Now let me look a minute at world hunger as I see the situation unfolding.

The two things I am aware of, on which there is general agreement at least among the staff that I work with, are these (1) people agree that world hunger is a very important issue, and (2) our current programs and policies addressing it leave quite a bit to be desired. We must improve them. But no one is quite sure what constitutes improvement in operational terms.

There is an ongoing activity in the White House headed by Peter Bourne. I see that activity as sort of an exercise in outlining the major issues and beginning to collect information both from public and private sectors from which some policy decisions can be made.

I have a large stack of responses to Peter Bourne's requests. They come from Government agencies, the private sector, the Ford Foundation, other foundations, and so forth. It will take awhile for the information to be digested and a policy to evolve.

The sorts of questions people are asking through the submissions are — first (a very good question): Who is in

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charge here? What institutions have responsibility and what responsibility does USDA have versus that of the Agency for International Development, the State Department, and so on? There are questions about the extent to which the U.S. Government should intervene in the domestic policies of other countries as conditions of aid. Major institutional policy-type changes will probably¹ have to come about if we're going to achieve some of the food aid and nutritional objectives that are being talked about.

Other questions come to mind. To what extent do we work through international organizations versus providing food aid unilaterally? How are we doing in terms of the level of effort? Are we going to have to increase the amount of resources that we commit to this sort of objective? How do we ensure that the food aid we deliver is actually constructive for rather than destructive to the domestic food systems in recipient countries?

DOMESTIC NUTRITION

Now let me go back to the domestic scene and start with the question of whether human nutrition is an important issue, one worth taking this much time and attention. My answer is yes — for a variety of reasons:

First, we are beginning to understand that, strictly on its merits, the relationship between nutrition and diet and health and many other factors affects our economy, our social fabric. The more we understand, the more apparent it is that we will need policies to help shape the nature of that relationship.

Second, people feel the issue of human nutrition is important. Whether it is or not, people feel it is. Their perception will be reflected in the sorts of questions they ask, the information they seek, and so on.

The Secretary of Agriculture recently invited several people from various interest groups — some of whom are at this seminar — to a conference he held in Pennsylvania. The purpose of that conference was to talk about what was to be important to the Department of Agriculture in the future. Two policy issues came through loud and clear as being on people's minds. One was rural development; the other, nutrition. Partly, those issues emerged because of the people who were at the conference, but I think others elsewhere agree.

A third reason that world hunger and nutrition are important is because the bureaucracy itself is now responding to the pressures. Even the bureaucracy believes the issue is important, and is seeking various ways to accommodate that importance. The National Academy study is an example, so is the Office of Science and Technology Policy study of nutrition research done at the request of the Office of Management and Budget. The Secretary of the Department of Health, Education, and Welfare has begun a reorganization effort. One of the major reorganization team studies that has been agreed to by the President will focus on food and nutrition policy.

And then, finally, the policy process is placing issues with a nutritional focus on the Government's agenda. Some of these issues have a direct and easily identifiable relationship to policy. Whether it is DES, nitrates, artificial sweeteners, ice cream standards, tobacco, or something else, I see a constant stream of policy issues coming across our desk that have a very definite nutritional focus. And I, for one, feel rather inadequate in considering these from the standpoint of nutrition.

Other policy issues will have important subtle effects on diet and nutritional objectives. The set-aside decision has been mentioned. I find the sugar policy more interesting because, in my conventional wisdom, I was looking out for consumers as well as others. But when I was looking out for consumers, I kept thinking that lower retail prices were what I should be looking for. Many of my nutritionist friends tell me no, they want those sugar prices to be as high as possible. It becomes very confusing. Meat import questions and a whole variety of other questions with important nutritional ramifications are coming onto the Government's agenda.

THE POLICY SETTING

Now let me look at the policy environment which, I think, will make or break our ability to design successful, effective nutrition policies. The sorts of characteristics I have in mind are these:

First, the role of Government remains highly uncertain. Any group that is going to address the topic of nutrition has to come to terms with the role of Government, in defining what is a politically acceptable and socially responsible policy. Will it be one largely of research and education versus one of moving in and dictating in some sense what people consume? An important part of defining the role is identifying the specific operational, measurable objectives of the policy.

I think we have moved a considerable way toward such an identification. Also, and here are some of my biases creeping in, I wonder how far we can go in a free society in dictating Government's role in a sort of heavy-handed way as to what the dietary intake of the population will be. At the same time, I recognize that in subtle and important ways, public policies do, in fact, dictate that intake, but it is done less openly.

A second major characteristic I see as fairly important is the existing scientific uncertainty of the topic of nutrition. I watched a show on sugar on "60 Minutes" a few weeks ago where, at least to my untrained eye, I saw two groups of scientists each of whom seemed to be eminently qualified. These two groups came to opposite conclusions about what role sugar should play in the American diet. As long as that degree of uncertainty exists, it is going to be difficult politically to come up with any very defined policies. They will support one side or other of any such issue.

Another characteristic of the policy environment is obvious, but I think it is particularly important in a new

area of this sort. That is the entrenched, I might say well-entrenched, economic interests. Many people will be affected importantly in economic ways by changes in policy. And we will need to be very careful in our analysis to be as objective as possible. We as scientists must represent a neutral competence in the design of that policy. And that will be hard to do.

Another characteristic that I think is fairly important is the absence of a political organization. It is not a total absence, but no strong and effective political organization on nutrition policy exists. That has had some implications:

First, it places and additional responsibility on the public sector to open the policymaking process up and reach out to people. Getting their involvement in it will be always difficult to do. It is much easier when there is an organization and a place in Washington one can call.

Secondly, the participants in the policy process are exposed to greater risks. While I don't anticipate our returning to the days when the USDA's Bureau of Agricultural Economics was under fire, some of the same characteristics will be present. There will be a lack of political isolation not unlike that experienced back in those days.

And then another characteristic that I think is fairly important is the diversity of viewpoints. I guess they are diverse because the nutrition issue intersects so many interests, so many disciplines, so many institutions. But there is extreme diversity of viewpoint, and I don't see that as necessarily being a problem. In fact, it can make things much more interesting.

But it does, I think, give reason for tolerance of that diversity and, in fact, more than tolerance of it, an intellectual curiosity about it. Being constructive will sometimes require, I think, lowering our voices an octave or two. and making certain that intolerance does not fracture the whole system and rule out any possibility for political organization to strengthen.

CONCLUSIONS

Let me close with some thoughts on institutional considerations. One of the difficult parts of trying to represent what is happening to an Administration 9-10 months after it has begun, is that things are just beginning to unfold, and one can't talk in very concrete terms. I have to keep referring to things that are going to happen and that is always straining. But I am going to have to talk about the institutional considerations in that light. We are headed into a real sorting out process with regard to institutional roles and responsibilities in the executive branch. It is clear the President feels that organization and the management of government is something he will concentrate a lot of his effort and attention on.

There are jurisdictional disputes everywhere, and nutrition policy is certainly not without its share of them. I have thoughts along three lines here. One is that I see a definite broadening of the role of the Department of Agriculture in food and agricultural policymaking. It is fairly clear to me that if it is going to be an effective institution in the future for dealing internally with conflict and resolving it, USDA must broaden its interests and it must give voice to a much broader range of concerns than it has in the past.

Over the past 4 or 5 years the Department was being perceived, at least by other major policymakers in Washington, as being an advocate of a rather narrow point of view. That meant that a lot of decisions got made outside USDA, often at the White House. I think that will change in the future. I think that the Department is going to have to cover a much broader range of concerns. I believe some important first steps are being taken. The working group on food and agricultural policy that the President established recently is the sort of interagency mechanism (one with leadership responsibility in the Department) that I think must work if we are to make Government effective.

Secondly, with respect to ESCS it is hard for me to be objective. Once you have been a part of an institution such as that you never leave it all behind. But it seems to me that ESCS is a very unique institution as a body of social scientists in this town. It has a great opportunity to help broaden Government's role in food and agricultural policymaking. Not only can ESCS service USDA, but I can see a certain advantage in its keeping some distance between itself and the Department. Obviously, to remain part of the Department, ESCS must be responsive to the policymaking apparatus in USDA. Yet it cannot take that as an excuse to build in isolation from reality in addressing relevant questions. It makes some sense for ESCS to have credibility as an institution, and that might call for a little bit of distance.

Finally, what about the role of economics? I think economics has a great deal to offer. I would agree that it needs to be broader in coverage than before and Howard Hjord is probably right that a lot of the models being used leave something to be desired. But I am persuaded that economics has not been tapped to the extent that it needs to be in addressing nutritional policy. Further, a lot of the effects, the realization of nutritional objectives, if we realize them, are going to occur through a market system.

So, in conclusion, I believe that food and nutrition policy is important, very important. If you are going to be involved in it, brace yourself because it will be interesting. Finally, I think that, in the Department of Agriculture, we have an institutional framework that can do many of these things if it makes necessary adaptations to those changing needs.

HUMAN NUTRITION AND FOOD POLICY

By Carol Tucker Foreman*

ABSTRACT

Producer and consumer interests are becoming more balanced in Department of Agriculture policy. One approach is to develop a human nutrition policy, build a food policy from that, and use it as a basis for making farm policy. Elements of the new food policy would include nutritional needs, the Nation's role in meeting international needs for foods, domestic production and food prices, food safety and quality, and domestic food aid programs. The challenge is to shape a policy that provides healthful food at a reasonable price, with a reasonable return to the production/distribution sector.

KEYWORDS: Food policy, human nutrition, domestic food aid.

The growing concern over human nutrition that many of us have been discussing is both domestic and international. That concern is strongly reflected in the changing attitudes of persons within the Department of Agriculture and in statements being made by the Secretary of Agriculture.

In recent years, the Department of Agriculture has been seen by the public as solely an advocate for producers. That public perception has never been quite right but it was a strong public perception. Today, however, I think the concerns of the Department for producer and consumer are substantially more balanced. Secretary Bergland has made a number of speeches in which he has repeated the same theme, that this country needs to develop a policy around human nutrition, build a food policy from that, and use those policies as a framework around which to build the Nation's farm policy. He usually follows by saying, "the trouble, folks, is that we've been doing it backwards all these years."

The goal of the policy sought by the Secretary would be to make available an adequate supply of safe, nutritious food at stable, reasonable prices while providing a fair return on investment to farmers, processors, and retailers, and decent wages to workers in the industry. The new policy would also be designed to provide for assistance to those at home and abroad who can't afford the costs of a nutritious diet.

ELEMENTS OF A FOOD POLICY

For the 1977 Agricultural Outlook Conference and for this seminar, I have tried to list what elements I think would have to be included in that new food policy. First of all, we have to determine what people's nutritional needs are and what levels and types of production are necessary to meet those needs. Second, the scope of this Nation's role in meeting international needs for foods and the means to meet those needs must be determined. What portions will be met through trade? What portions through assistance? How much additional domestic production will be necessary. These decisions will all need to be made. Third, our food and nutrition policymakers must consider what measures are necessary to stimulate and sustain adequate levels of production. Fourth, policymakers must take into account the need to assure that food is available at a reasonable price. Fifth, the policy has to include the means to assure a safe and high-quality supply of food. And sixth, programs must be devised to assist those who cannot afford adequate food at market prices.

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Now, obviously, in the development of any sort of food and nutrition policy, the U.S. Congress will have a major role. Today, I will limit my comments to what role the executive branch might assume in developing such a policy. I think that the U.S. Department of Agriculture has to provide the leadership essential for developing a food and nutrition policy. It will likely have an important role in administering many of the programs that might come out of such a policy.

NUTRITIONAL NEEDS

Let me go back to the first element outlined for a food policy — that it be based on a detailed assessment of what the nutritional needs of people are. To even begin to develop a food policy, we have to know first what persons in various age, sex, racial and ethnic groups, lifestyles, and geographic locations need nutritionally for optimal growth and performance and for continued well-being. Determining those needs obviously requires a commitment to increase human nutrition research.

Although we have had a very small program of human nutrition research in the United States since the 1870's, we do not have adequate answers to some of the most basic questions about human nutrition requirements. I think the Department of Agriculture must play a lead role in supporting this research through both its in-house and extramural research programs. The National Institutes of Health and the Food and Drug Administration must also play important roles in research, especially in studies related to the treatment of disease and toxicity problems.

THE INTERNATIONAL DIMENSION

The second element of a national food policy is the part that the United States chooses to play in meeting international food and nutrition needs. USDA must be a major influence in determining what portion of this will be done through trade, what portion through assistance, and how much additional production is necessary.

AGRICULTURAL PRODUCTION

The third element of a basic food policy is to stimulate and sustain production adequate to meet domestic and international nutrition needs and our country's trade needs. In this area too, the Department of Agriculture must lead the way. Government policies have long encouraged certain kinds of production and marketing and discouraged other kinds — through support prices, through various programs of research, and through the types of regulation carried out. Government policies have never benefited all producers equally. Federal Government actions have always helped some areas of agriculture at the expense of other areas. Support programs leading to higher feed grain prices, for example, have traditionally been somewhat of a burden upon livestock producers.

I think that shapers of a new food policy must reassess which areas of agriculture are to be supported and

promoted. In the future, the basis of such decisions must be to meet nutrition and trade needs, which may involve a reorientation of production patterns. Any new policy of production encouragement should be considered so that, over the long run, it will cause less dislocation and be less inequitable than policies of the past. In previous years, Federal policies and the results of Federally funded research have caused some economic dislocation of farmers, or farmworkers, and of some processors and retailers and have usually done so without the Federal Government providing any compensation for that dislocation. Future policy obviously should seek to avoid those kinds of inequities.

REASONABLE PRICE

The fourth element of a new food policy must be to assure the availability of food at reasonable prices. We have always believed that full production was the answer to reasonable prices, but full production at the farm level obviously cannot now guarantee moderate retail price levels. One of the most important elements in determining those price levels is what happens to the food after it leaves the farm. Marketing costs have risen so sharply that now they comprise 60 percent of the total food bill. Indeed, the Economics, Statistics, and Cooperatives Service observes that the food price inflation of the seventies has largely been attributable to marketing cost increases.

It is true that some of the marketing cost increase is a result of uncontrollable factors such as the increase in energy costs and the general inflationary trend. But if we are to have reasonable levels of farm income and reasonable prices for consumers, we will obviously have to develop mechanisms to discourage unnecessary costs from being built into the food system between the time the food leaves the farmer and the time it reaches the consumer. The result may be a number of government programs, it may be the abolition of some government programs. A few steps along the way might include a reevaluation of existing government and industry practices that encourage additional costs. One might be a reexamination of those government regulations that add unnecessarily to food costs — certain transportation regulations are one area that comes to mind very quickly.

Other areas that may lead to inflated costs of food are inadequate competition, excessive advertising, and excessive packaging. Inadequate competition is particularly troublesome. Recent studies have indicated that economic concentration in food manufacturing and retailing is increasing. Responsibility for those problems lies primarily within the realm of the Federal Trade Commission and the Anti-Trust Division of the Department of Justice. But the Department of Agriculture can be involved in making its great wealth of data on factors affecting food prices readily available to those agencies in the carrying out of their tasks. The Congress, too, can play a role by perhaps reinstating or renewing the old Commission on Food Marketing. Also, some of the data that we now base concen-

tration and competition figure on, now 10 years old, can be updated. As apparent price competition declines, advertising and packaging competition seems to increase. Government policy should take note of these problems.

In trying to secure reasonable food prices, I think there are two courses of action to resist. One is to cut food costs by cutting farm income. The other is to permit the use of questionable substances in food or to relax health and safety regulations. There are few, if any, acceptable trade-offs of safety for savings. A cheap food supply purchased at the expense of health protection was not a bargain yesterday and it is not likely to be a bargain in the future.

FOOD SAFETY

The assurance of a safe and high-quality food supply is the fifth element for a food policy. Although food safety is virtually unchallenged as an appropriate goal, the means to achieving it have been in dispute for over 80 years. The Federal effort dates back to 1906 when the original Food and Drug Act was passed. That Act was passed mainly because of grave public concern over the use of chemicals to preserve foods. The acceptability of chemicals in food continues to be a hotly debated issue.

There are a number of laws such as the Food and Drug Act, the Meat Inspection Act, and the Poultry Products Inspection Act, that are firm in their rejection of unsafe chemicals. A food policy that has as its first concern the nutritional well-being of the public cannot be less strict than the current laws.

A food policy for the future must also include vigilant enforcement of these laws. That may not be enough. Government action to promote food safety may need to enter new areas of concern. Current laws involve food additives and manufacturing processes. Yet evidence now suggests links between high consumption levels of substances such as salt and fat and such diseases as high blood pressure and some types of cancer. Shapers of food policy concerned with food safety should be able to treat these problems as well. And perhaps in the future, the Department of Agriculture will have to become as concerned about the fat in a hot dog as we are today about the nitrites.

The emerging issue of food quality also needs to be considered. Public policymakers should address more adequately such questions as the construction and composition of processed foods. Industry is engaged in a constant effort to bring new technology to food processing, and it has helped lower the cost of food in the marketplace and make food more available. But the results are sometimes unexpected. We end up with ice cream that is not like what mother used to make or tissue from ground bone in hot dogs.

Although it is unlikely that public policy will exclude the results of new technology from the marketplace, I

think policymakers must find better ways to help assure consumers that the quality, nutritional value, taste, and appearance of new foods are as good as or better than the previous products. I think we must also find better ways to differentiate among products associated with certain basic materials or processing methods and those made in laboratories or with new ingredients or new methods so that consumers can understand easily what they are purchasing. The creation of the Food Safety and Quality Service in the Department of Agriculture is our first step toward addressing the issues of food safety and the rising issue of food quality. It is only a first step, however.

FOOD DISTRIBUTION

Finally, food policymakers must consider people who cannot purchase an adequate diet. USDA currently supports getting food to such individuals through a variety of ways. The Food Stamp Program increases food consumption by increasing income and limiting the increase to food purchases. The School Breakfast, School Lunch, and other child nutrition programs provide meals in an institutional setting. The Women, Infant, Children Supplemental Food Program, the WIC Program, provides prescription food packages to vulnerable persons at nutritional risk during the most critical phase of human growth and development.

The President has proposed to eliminate the Food Stamp Program in favor of a general cash assistance program. His proposal assumes that there will be no appreciable loss of nutrition as a result, and some studies currently available support that assumption.

In the institutional feeding programs, such as school lunch, the issue of food quality is becoming one of growing concern. In the past few years, some items of questionable nutritional value, such as fortified grain fruit products and formulated milk products, have been allowed into some of these programs. The Department has moved to prevent their further use.

Plate waste in meals that fail to meet portion and nutrition requirements are additional problems of the institutional feeding programs. The Department of Agriculture must upgrade these programs by placing a greater emphasis on serving healthy, appetizing diets in attractive settings. These programs can be and should be learning laboratories for good nutrition. They can teach by example that food can be both nutritious and appetizing.

The WIC program has perhaps the greatest capacity to use good nutrition to improve health and assist in breaking the cycle of poor childhood development that is often associated with poor nutrition. It provides high-quality protein, iron, calcium, and Vitamins A and C to pregnant women, nursing mothers, and young children. Because WIC operates through health programs, it integrates health care, nutrition education, and food assistance. It has been shown to result in substantially increased visits by parti-

cipants to prenatal and neonatal health clinics as well as increased consumption of nutritious foods during a critical growth stage.

THE CHALLENGE BEFORE US

The food policy I have described — and the questions it raises — may make some people uncomfortable. Consumers worry that changes in the food economy will hurt them by creating higher prices. Farmers are already angry because more of the returns from retail food sales do not flow to them. They fear the Government intervention in production in the name of health or nutrition will put them in a more precarious economic situation. Processors and retailers already state that their profit margins are too low and that more Government regulation will cause their financial ruin.

The concern about prices and profits is reasonable. But we cannot ignore our basic responsibilities to safeguard the nutrition and health of our citizens. The challenge before us, therefore, is to shape a new food policy that provides healthful food at a reasonable price, with a reasonable return to those who get food to our tables. It's a big job. I think it is one of the most important tasks in public and private policy in our time, and it is not one that I am prepared to suggest is impossible to achieve. Obviously a variety of Government agencies must be involved and a Department of Agriculture, or more appropriately, a Department of Food and Agriculture, must lead the way in securing such a health policy.

There are many people who feel that the Department of Agriculture is an inappropriate institution to work with

some of the problems that I've listed here, particularly research on food assistance, safety, and quality. What is inappropriate, I believe, is to assume that the Department of Agriculture will always put the public interest behind a producer interest. The time has come for a balance of interests.

Any Secretary of Agriculture will act to carry out the law he or she is sworn to administer. The current Secretary of Agriculture, for example, is sworn to administer the Meat Inspection Act and the Poultry Products Inspection Act, the Food Stamp Act, the WIC Act; and he's doing so with great vigor and care. I presume that, in most cases in the future, the Secretary of Agriculture, whoever he or she may be, will do the same. If you don't assume this, you must assume that a democratic government of checks and balances is impossible to achieve and I'm not prepared to assume that.

It seems to me that it is important to legally require the Secretary of Agriculture to protect the public interest in such areas as food safety and quality and food assistance programs. To remove those requirements will force the Secretary of the Department into the narrow role and narrow range of interests that is unacceptable to the public at large. It will also guarantee to any future President a continuing conflict between the Secretary of Agriculture, who could be sworn in those circumstances only to protect the producer interests, and all other of the Cabinet officials, to whom a protection of the public interest is assigned. I think that such an arrangement would be unwise. The Department of Food and Agriculture that I've tried to outline today — one having responsibility for a broad-based food policy — would have a much more reasonable and important role in the governing of the country.

PERSPECTIVES

By Tim Hammonds*

My purpose is to spark some thoughts for discussion. I will not summarize what has already been said. I will try to share some of the things that we have been wrestling with in the food retailing community that I see as running through all the issues that we have just heard presented.

It is important, from my point of view, that you have a sense of purpose about what you are doing when you reassess food and nutritional policy. It occurs to me that here is a real opportunity that cannot be missed. There are a few times in a lifetime or in anyone's career when one has an opportunity to make a real change in program thrust. I believe such an opportunity exists now — in nutritional education and nutritional programs.

The time is right because customers in the United States are ready for it. The Congress is ready for it. The industry is ready for it. We do a lot of consumer survey work in our business as food retailers and we have been stuck recently at how the attitude toward nutrition and information on it is shifting in this country. Lifestyle is shifting, family orientation is shifting, the concept of meals is shifting, and the attitude toward nutrition information is shifting.

Howard Hjort touched on some changes in the system and the changes in Congress. I would like to add to that with changes in the industry. Food retailers went through a tough time when they introduced scanning in the Universal Product Code. They found out that consumers need to be considered in all phases of the decisionmaking process. They have learned that lesson. They are now looking toward nutrition as a new way to bring the industry and the consumers together on a major issue. The Government can have a key role in that. Nutrition is an issue that would win widespread support, not only among the groups that have been discussed here, but among the industry groups as well. I think the food manufacturers can be included, although I speak primarily from the food retailers' point of view. From that point of view, the policy has always been to provide a broad selection of food products, without a judgement as to their nutritional worth, and to let the customer make a choice. Along with providing product variety, we need to provide enough information for the customer to make a basic, informed choice.

The industry sees nutritional education as a primary role for it in the policymaking process. Some downside risk exists when one starts along this path. If, in fact, it is a major new opportunity, to reorient the thrust of programs in the Congress and in the Government as well as in the industry, we need to do the job right. We have heard a lot of discussion about the need for further research to define what we need to do. The food retailing industry would agree with that. But we would also caution that the time for action grows short. We believe that some action needs to be taken in the short run. Do not let the public wait too long for this policy reassessment process.

Let me mention some things I feel are a downside risk in this area. One thing we wrestle with from an industry point of view as we push toward more and more information, and particularly information available on labels, is the fact there is now no complete national nutrient data bank to draw on in the United States. Don't push the industry too fast in providing additional information on labels without taking a good hard look at what source of information it would draw on to produce that information. One also needs to be very careful about the policies developed pertaining to foods that are felt not to be of significant nutritional value. The common label is "junk foods." That is an area popular to jump on early, but there is a tremendous downside risk. The first thing that you may do is touch off a vitamin fortification race. Vitamin fortification is very easily done and it is one area that one needs to be extremely careful of. The other thing to be careful of is whether one can, or should even try, to dictate what people consume. From the industry's point of view, our answer to that is no. We need to preserve the basic freedom of choice in this country. If we are to do that, the educational programs that the industry is moving toward become a very important part of the policy process. I hope that as food policymakers and researchers wrestle with the policy implications for programs they also wrestle with the policy implications of nutritional

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education for the average consumer. Carol Foreman mentioned the Food Marketing Commission. Normally I would spend a little time talking about that, but I was so happy to hear her talk about the cost side of it as well that I am not going to mention that.

Let me close by saying that another area to be careful of is that all these policy solutions have tradeoffs. Every paper at this seminar touched on that to some extent. These are complex issues and one must be careful that apparently naive solutions are not presented. One area that involves a complex tradeoff is that of fruits and vegetables. One of the program thrusts that we have heard so much about recently, especially in the School Lunch Program, is the move toward use of fresh fruits and vegetables. Retailers sell both fresh and processed, so we do not have an axe to grind in this. We do, however, have

some concern about the kind of message that use of fresh produce gives to the customer. If fresh fruits and vegetables are to be a major part of a policy, one must be aware that we are then at the mercy of the home preparation process, unless we encourage their consumption uncooked. I would submit from our work with consumers and our work with the Federal Energy Administration on energy losses in food processing, that home food processing is one of the weakest areas in our link from seed to table, one that certainly deserves close attention. Fresh fruits and vegetables are nutritional but, in some circumstances, processed foods can be equally nutritional and can be prepared at a reasonable cost. Their use certainly fits in with the School Lunch Program moves in some areas of the country to end food preparation in the school.

PERSPECTIVES

By Ellen Haas*

As I listened to the speeches, I heard many good things, many good issues raised. I heard that nutrition is important, that the food system should be treated as an entity, that it is very complex, that USDA has to broaden its constituency. I heard how necessary the various components of a food policy are and that the problems exist, not only domestically but internationally as well. But the discussion does not make me all that happy. I did not hear very much that was beyond the rhetoric. Maybe that is where you have to begin, but I was hopeful that perhaps we had come a bit farther than that. I was hopeful that we were going to come closer to a discussion of just how we're going to implement a food policy.

It has been over 9 months that this Administration has been here with the high hopes that we are going to have a national food policy. No one has to be sold any longer on the idea that nutrition is important. What we do have to know is how we are going to begin. I heard earlier that we are still some distance away from getting those objectives for nutrition policy. That worries me. What have we been doing if we have not been trying to look at formulating those objectives? I think we have got to make the commitment that there has been enough rhetoric. Then it will be possible to develop standards on which to base policy.

Let us evaluate what was presented at this seminar. Why didn't anyone talk about the McGovern dietary goals report? Why didn't we have some evaluation beyond just a mention of the world food and nutrition study by the National Academy of Science? A good body of literature has been written in just the last 3 years that can be evaluated to begin implementation of that kind of policy.

I was an historian back in the old days — taught history — and recall doing many papers on Brandeis. He said that "justice delayed is justice denied." I see a parallel in the nutrition field, that nutrition delayed is health denied, the more we talk about a national food policy as if it were something in the far distance, the more we contribute to increased health care costs. I think that it has been estimated that something like \$30 billion of our health care costs can be attributed to nutrition. So I would like to hear more about standards and more about what we can begin to do immediately. Let us define those

operational-specific objectives that were talked about. It is way past time.

One other issue that really disturbed me (and I thought I was not going to be so serious today) was the public input process. There was a lot of talk about how we develop, or let us say, how the process can be opened up. I personally feel that *how* we develop our food policy is equally as important as the food policy itself. And outside some isolated instances like this forum, there has not been an organized systematic approach to encourage public participation in such policy areas and in policy decisionmaking. Without that, without the emphasis on the process of providing input, we will have a situation where the emotions are expressed, first on one side and then the other side. If there was a process within the Department, in the policymaking process, for informed comments from all those who are a part of the food system, I think that this emotionalism would die down and we would begin to have constructive input. Any policy is then going to reflect that input.

Another thing we will continue to have without that kind of input is the laundry list of headlines. Probably the issues in the headlines will not go away, because that is life too; that is reality. You're probably always going to have those issues but the participants will all be better informed. Further, if there is an institutional process, if there is the implementation of a national food policy, we will get away from this episodic approach to resolving these issues. I think Howard Hjort is right when he says that the analysis has been episodic, the analysis has been fragmented. We need to have a total approach to the whole problem — a systematic approach to the nutrition issue. Nutrition should be the foundation for our farm and food and agriculture policy. We have been going to it backwards. It is about time we begin to plan in a concrete fashion, with a listing of just how we are going to get at it.

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PUBLIC ASSISTANCE PROGRAMS AND FOOD PURCHASING

By Richard P. Nathan*

ABSTRACT

Drawing on experience with the Family Assistance Plan (FAP), proposed in the sixties but never adopted, the author evaluates the current welfare programs. Several goals of the FAP have been met by targeted legislation since 1969. The Food Stamp Program is described as important in providing assistance to the working poor and helping to reduce the regional inequities in public assistance. The author advocates using an incremental approach to welfare reform.

KEYWORDS: Welfare reform, Food Stamp Program, food aid, Family Assistance Plan.

INTRODUCTION

The role of "in-kind" transfer programs in the context of welfare reform represents an important current concern. In this article, it is argued that an incremental approach to welfare is preferable, and proposals to change the entire system on a comprehensive basis are not.

My experience on these issues, particularly in government, comes from working on the Family Assistance Plan (FAP), a program developed in 1969 but not adopted by the Congress.

The welfare situation is a popular topic, sort of a Mt. Everest of domestic policy. Every 4 years policy-makers in Washington try to climb that mountain; State governors behave much the same way. I have asked myself the question; what should we do next on welfare policy? In this perspective, I begin with a review of what the Family Assistance Plan was all about and then consider welfare policy issues as they relate to the Food Stamp Program.

GOALS OF THE FAMILY ASSISTANCE PLAN

The Family Assistance Plan had four important goals. One goal was to provide assistance for the working poor. There was a need to develop policies for intact families with two parents, who were not covered in most States under welfare programs. The second objective of the Family Assistance Plan was to set a national minimum to

raise welfare benefits in the low benefit States, relative to what they are in higher benefit States. A third objective was to provide a means for helping the aged, blind, and disabled. A fourth goal, as is always the case for welfare policy, was to strengthen the programs to help welfare family heads find and keep jobs.

Those of you who have long memories and an interest in social policy may not think of it this way. I believe that all four of those policy objectives of the Family Assistance Plan have in fact been achieved by changes in the law since 1969. In 1972, legislation was passed that



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set up a program for the aged, blind, and disabled (the SSI Program). This program is administered by the Social Security Administration. Many people in OASDI (the Social Security Program) are also in SSI. In fact, 75 to 80 percent of the people receiving benefits under the old public assistance aid for the aged also received Social Security benefits. There were good reasons to link this aid for the aged program with the Social Security Program. That is what has been done. It has taken about 3 harrowing years to "debug" SSI; now it works reasonably well.

Goal number two involved the employment features of family assistance; work requirement, jobs program, and day care. The work requirement in the Family Assistance Plan was introduced in an amendment offered by Senator Talmadge. Work requirements have been very popular. Jobs programs, as you know, are greatly expanded; thus, the job-related goals of the Family Assistance Plan are being achieved through other programs. As for the work requirement part of the goal, the proposition that a welfare family should work is embedded in every law that provides Federal assistance to working-age people.

INCOME SECURITY AND THE FOOD STAMP PROGRAM

The other two objectives are the most important to food policymakers and researchers — aid for the working poor and national welfare benefits. These are, in fact, the benefits that the Food Stamp Program has provided. When we consider the Food Stamp Program (FSP) in relation to income security policy, we see that its significant contribution has been to enable the attainment of these other two goals. The FSP does important things in an acceptable way and helps millions of people. Particularly, it helps them relatively more during recession periods; that, to me, defines a good program in the income security field.

Since the Food Stamp Program is national, people with low incomes and large families can receive income supplementation. The program has a strong work incentive because it has a low reduction rate, 30 percent on the average, 30 on the margin, however you want to count.¹ That is lower than Milton Friedman said we should have for a negative income tax. The Food Stamp Program has a good work incentive effect. Today, a family of 4 can receive as much as \$2,000 a year in supplemental income. The benefits may be lower — depending on their income — but it is integrated with their income in a way that preserves work incentives. The FSP aids a group of people which, when people were designing the Family Assistance Plan, were not covered by welfare programs. Yet the

irony is today, though everyone thinks that FAP failed (and in many respects it did), the Food Stamp Program provides aid to the working poor at a higher level than even the most liberal version of the Family Assistance Plan authored by Senator Ribicoff.

In somewhat inexorable, curious ways, American social policy meets needs. It may not always do what analysts and Brookings economists think is beautiful and neat, but it is important to people who need this support to supplement their incomes and their diets.

The last objective of welfare policy, in 1969 and since then, has been a national minimum benefit payment. And, in fact, the Food Stamp Program serves this purpose also, in a very important way. In the States with low Aid to Families with Dependent Children (AFDC) benefits, food stamp benefits are lower. Thus, there is an equalizing effect in the lower income States. AFDC plus food stamps, plus Medicaid makes a package of income transfer programs that comes a lot closer to meeting the needs of the poor — particularly taking into account lower wages and living standards in some areas. Disparities in incomes are greatly reduced by this universal package of programs, which lays benefits over the top of any kind of income, be it welfare or work income.

The Food Stamp Program is, thus, a very important welfare program. I believe its adoption is the single most important change in welfare policy in the United States since the enactment of the Social Security Act in 1935. The FSP has filled in gaps; it has added important groups to coverage. While it may not be the dream of analysts and economists who specialize in welfare policy, they need to look very hard at its role. There is a growing recognition of the way in which the Food Stamp Program is related to other welfare programs and, generally, to income support policy issues.

ELIMINATION OF THE PURCHASE REQUIREMENT

The next significant fact, part of the picture in 1977, is what will happen when the purchase requirement is eliminated (EPR). This, of course, is a dramatic change, one that, in effect, moves the Food Stamp Program more in the direction of being a "mini-negative income tax with funny money." It is very flexible now; and when the new regulations go in, it will be even one step closer to an integration of this program with other welfare policies in the Nation.

I have testified, as have many people, on the significance of this step. One of the people I testified before when this issue was pending is now the Secretary of Agriculture. He deserves much credit for bringing about this change in policy, as does the Administration and Mr. Foley, the Chairman of the House Agriculture Committee. Nationally, we are now moving to integrate these programs better, and are doing what I think we should

¹ Benefits are equal to the cost of the Thrifty Food Plan reduced by an amount equal to 30 percent of the household's income.

do in treating welfare policy issues generally. We are making incremental changes to this huge welfare system rather than trying to reform it all at once. I don't think the comprehensive reform approach is going anywhere; it presents lots of problems.

I believe, at least in this Congress, that food stamps should not be cashed out. One reason is because EPR does not go into effect until next year. Many theoreticians of social policy tend to forget how difficult it is to do things in a political setting. Perhaps in the next Congress, the sensible thing to do will be cash out food stamps. We should, however, wait until the system absorbs the important new regulations that are now being issued and will soon go into effect.

CURRENT WELFARE POLICY

Let me switch now to the wide screen of welfare policy in the Congress in 1977, and describe what I see as the choices for the Congress and how the Food Stamp Program fits into current issues. At the beginning of 1977 there were basically three choices for welfare policy. The first choice was the so-called negative income tax approach. The basic idea here is that welfare is in such a state that what is needed is to dismantle all the existing programs, and in their place put a single well-designed, new supersystem for welfare policy; a negative income tax or an ISP (Income Support Program). In many respects, the Administration's "Better Jobs and Income Program" welfare reform plan has important features encompassing this approach.

My favorite philosopher, and I appreciate him more the longer I live in Washington, is H.L. Mencken. He once said "For every human problem there is a solution which is simple, neat and wrong." The negative income tax, at least today (now that the Food Stamp Program has grown and become universal) is really not what we ought to use.

The second approach is the incremental approach. My experience in Government, has convinced me that we should build on the programs we have. We should take the next steps and not attempt to reform the whole system all at once, that is what incrementalism is all about.

The third option which was discussed at the beginning of 1977, is what most people call the "triple track approach." Triple track was backed early in 1977 by the AFL-CIO, whose support one would expect to make it a winner in the welfare field, but it did not move very well. The concept of "triple track" is that people who can work are eligible for a work program, and people who cannot work are put in one of two welfare programs. The AFDC group is representative of those who would be in the second track. The SSI group is the third. There are different ways of defining it, but basically the approach means one track for people who can work and two for people who cannot.

Now go back and think about the three approaches available at the beginning of 1977. If I were writing a

history of welfare policy for that year, I would suggest as an interpretation that the welfare planners in the Administration went to the President with these three choices. What I think happened was that someone in the White House, very likely the President, said "I'll take one of each but don't spend any more money." You remember the first statement of the 12 principles of welfare reform; that's how it reads. It is a little bit of each of these three approaches, and point number one is "no more money." Once they got off on that basis, the policy planners for welfare in the Administration never really recovered. They had too many things going on; and the notion that you can reform welfare without money is an idea not worth spending a lot of time on in Washington. From there, they went through many planning steps and developed a complex, 163-page bill which, in my opinion, has floundered because it lacks a strong identity.

WELFARE REFORM — THE INCREMENTAL APPROACH

I would like now to present reasons why I favor the so-called incremental approach. This is not just an academic debate. It is a serious debate with important consequences. There are five reasons I believe an incremental approach and not comprehensive reform is the right way to make welfare policy. The first relates to how tremendously welfare programs have grown in the last 10 years. From 1967 to 1977, there has been what can only be characterized as tremendous growth in programs that assist needy people. Look at the statistics: 1967 AFDC, \$2 billion — 10 years later \$10 billion; Medicaid in 1967, \$1.9 billion — currently \$17.2 billion. Food stamps, in 1967 just a gleam in somebody's eye (\$100 million), is now a \$5 billion-plus program covering 15 to 20 million people, depending on the business cycle and general economic conditions. Housing subsidies went from \$300 million to \$2.5 billion in 1977. The SSI program mentioned earlier did not exist in 1967; it now costs nearly \$7 billion.

We are meeting needs; in fact, to such an extent that if one looks at the poverty gap, and then one corrects for the fact that Census data do not include in-kind benefits (food stamps or medicaid), the sum of all of the income support programs for poor people, including the in-kind programs, is 161 percent of the so-called poverty gap. Of course not all that money goes to people in poverty. It also goes to some people above the poverty line to provide incentives to earn income beyond the poverty level. But the plain fact of the matter is growth, tremendous growth in programs that fit together much better than most people realize. The problem today is different from what it was in 1969. The gaps and deficiencies of welfare policy are smaller today; our approach to welfare reform should recognize that.

Why incrementalism? The second reason is somewhat philosophical. We live in a society in which different peo-

ple have different ideas about the goals of social programs. Many people apparently think we should treat the aged poor one way, the retired people who paid into social security one way, the unemployed another way, the working-age poor another way, children still another. We have many different values about how to meet the needs of many different groups. Is it very surprising therefore that we have a number of different programs? I do not think so. If we look at other industrial nations, we find that none of them, not a single industrial democracy, has a negative income tax. All of them have different programs to meet different needs.

The third problem of holistic welfare policy (and the reason for the incremental approach) relates to the conundrum of welfare policy. The negative income tax has been advocated by Milton Friedman on the conservative side, James Tobin and others on the liberal side. It thus has an identity crisis. Milton Friedman says we need a program with a low tax rate, less than 50 percent. Now those who know about welfare policy know that if there is a benefit rate at the poverty line and a reduction in marginal benefits of 50 percent for each dollar earned, the breakeven point is at \$15 or \$16,000 for a family of four. Large numbers of people are eligible, and a program is created which is tremendously expensive. In point of fact, we must have two tracks. We need one program for people who can't work which has a near-adequate benefit and a high reduction rate — AFDC. And we need another program which has a lower reduction rate and a lower benefit and supplements other income — the Food Stamp Program. Mathematically one cannot solve the problem without \$30 billion unless it is handled that way.

The fourth reason for an incremental approach is that, in my opinion, the welfare "mess" has been overstated. If we look over the last 3 years at the progress that has been made in introducing automation systems (HEW gets credit for this — much approved quality control procedures for AFDC), the error rates in AFDC have been cut in half. The welfare problem tends to be overrated; the real problem is Medicaid. We should be looking at fundamental reforms in health policy instead of spending so much time on welfare reform.

Finally, the politics of welfare reform are not propitious. Groups want welfare reform for different reasons. Some people want welfare reform to get the "chiselers and the cheats" off the rolls. Some people want welfare reform to help more people, to give more benefits — a liberal position. Some want it as a way of bringing in additional groups, as a way of providing fiscal relief to State and local governments. Ask somebody who wants welfare reform, he's got a different reason for it than the person next to him who may also want it.

Some recent statistics from the *New York Times*-CBS poll show a great ambivalence on welfare issues. People were asked if they thought welfare programs were needed or if, instead, recipients could make it on their own without such help. Sixty percent said welfare programs weren't needed, that people could make it on their own.

When asked instead whether they approved of helping children and poor families, 80 percent said yes. Did they believe in Medicaid? Even there a very high percentage of people said yes. There is much confusion in the heads of individual people on this emotional issue. So when one talks about welfare reform as if there were one notion, that is an incorrect conception of the politics of welfare policy.

CONCLUDING REMARKS

Mr Foley, Chairman of the House Agriculture Committee, asked recently at a hearing if I thought it would be desirable to cash out the Food Stamp Program now as the new regulations to eliminate the purchase requirement are going into effect. He said, "Assuming that the implementation of the elimination of the purchase requirement goes smoothly, how would you feel about a general cash-out, a cash-out incrementally of SSI and public assistance caseloads and then to the working poor?" I did not answer his question — he did. Mr. Foley's implication by his question, is that perhaps we could incrementally cash out food stamps for SSI this year. That makes sense. In addition, perhaps we should put a national minimum on AFDC, make a series of changes to establish national eligibility standards for AFDC, and integrate the standards for AFDC and Food Stamps to the fullest extent possible. Then, as Mr. Foley's question suggests, perhaps in the next Congress (1980-81), food stamps could be cashed out for AFDC — put them in with the AFDC benefit — and maybe food stamps could also be cashed out for the working poor and a cash income supplement for this group could be provided.

I would like to end with a story — it expresses fairly well my final point. When I was working on the Family Assistance Plan, my daughter was 5 years old. I used to go away a lot. One of the members of my task force was in New York so I went there and got home late one night. The next morning, my daughter said, "Where were you, Daddy?" Wanting to speak to her in a way that she could understand, not realizing how profound her notions of this would be, I said, "I went up to New York, to talk to a man about how to help poor people." She said, "Oh, that's easy Daddy, just give them money." And, indeed, that really is the issue with food stamps. We are moving in that direction.

It seems to me that in a sensible, systematic, thoughtful way, ultimately we should cash out food stamps. But I do not think we should go the full way faster than we can digest the change, and faster than change can really be understood. We have made tremendous progress building these programs, changing them to make them better, to avoid problems, to improve their administration.

I am not for a moment suggesting that through good analysis and the important contributions of people such as those attending these seminars, we cannot get a better understanding of how these programs work. I believe we

can. But I think we must recognize that in our political system that is a very emotional issue. We have to think about what we can do step by step. The record of change with the incremental approach is quite good. There are some things we should think about when considering food stamps in regard to the welfare discussion now going on

between the incrementalism and comprehensive reform positions. This is a debate that we will hear more about. H.L. Mencken has to have the last word. He once said (and this reminds me of the negative income tax), "Just because a rose smells better than cabbage doesn't mean it will make a better soup."

POVERTY, FOOD SELECTION AND HUMAN NUTRITION

By Sylvia Lane*

ABSTRACT

The "poor" could obtain a nutritionally adequate diet for less than they spend on food, but the less they spend, the less palatable, the starchier, and the more monotonous the diet. Their access to food is limited because they have low incomes and pay higher prices than others for food under the existing food delivery system. Generally lower educational levels and economic and nutritional expertise further handicap those with low incomes in maximizing utility derived from their food expenditures. Nonetheless, they appear to be relatively efficient in obtaining nutrients per dollar of food expenditure. Nutrition education programs require extension and improvement if their effectiveness in emending food choices is to increase.

KEYWORDS: Food selection, nutrition, poverty.

POVERTY, FOOD SELECTION, AND NUTRITION

In our society, income provides access to food. It does not directly determine tastes and preferences for food, which are the major factors in food selection and hence nutritional well-being. Tastes and preferences, being learned, may be modified if access to food is broadened or through education. Higher income, directly correlated with higher levels of education, is associated with more knowledge, including nutritional knowledge obtained from many media, and from broader experience with foods. All these factors make for differing tastes and preferences in food (5, pp. 131-136, 149-150, and 293).¹

In this article, the role of income in determining access to food is examined. It involves consideration of (1) the cost of a nutritionally adequate diet, and (2) the percentage of the population who can afford such a diet. Other topics treated include: (3) the effect of income and education on nutrition; (4) food selection among the poor and identified influences upon these selections; (5) sources of food for the poor; and (6) the effect of nutrition edu-

cation programs on food selection and nutritional well-being of the poor.

COST OF AN ADEQUATE DIET

The Recommended Dietary Allowances (RDA's) established by the Food and Nutrition Board of the National Research Council-National Academy of Sciences are the U.S. standards for the recommended daily intake of various nutrients. RDA's were devised as estimates to "serve as a goal for good nutrition" in the sense that "an individual consuming a diet that provides the RDA's for all (the listed) nutrients would be unlikely to suffer nutritional inadequacy" (8, pp. 3 and 13).

FIVE TYPES OF ADEQUATE DIETS

Professor Jerry Foytik recently estimated expenditures for food for two couples on a palatable, but not necessarily enjoyable, diet. It provided at least minimum requirements of calories, protein, calcium, iron, Vitamins

¹ Italicized numbers in parentheses refer to items in References at the end of this article.

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A and C, thiamine, riboflavin, and niacin. Diets meeting these requirements will normally meet the requirements for the other nine nutrients (Vitamin D, Vitamin E, folacin, Vitamin B6, Vitamin B12, phosphorus, iodine, magnesium, and zinc) specified in the RDA's (21, pp. 91-109).²

At prices prevailing in northern California in 1972-73, food expenditures were \$34.20 per month for the younger couple (the wife was pregnant), and \$28.60 for the older couple (9, p. 6). Eliminating all palatability requirements reduced monthly food expenditures to \$18.30 for the younger couple and \$15.20 for the older couple (9, p. 9) at 1972-73 prices, close to half the estimated level for the more palatable diet. This latter diet contained few convenience foods and necessitated home baking.

The cost of the first set of palatable diets using January 1975 prices was estimated at \$47.88 for the younger couple and \$40.44 for the older couple (41, p. 40). These figures may be compared with the estimated cost of the U.S. Department of Agriculture's low-cost family food plan in January 1975 of \$132.66 for the younger couple and \$107.00 for the older couple (36, p. 22).

The discrepancy between the Foytik and USDA estimates is primarily accounted by the differences in the foods included. The USDA low-cost, moderate-cost, and liberal-cost food plans all provide well-balanced, home-prepared nutritionally adequate meals for families of various compositions, sizes, and ages. They were most recently revised in 1974 to reflect food consumption patterns typical for most groups of persons in the United States. (24, pp. 3-11).

The USDA lowest-cost food plan, the Thrifty Food Plan, promulgated in 1976, reflects the observed food consumption patterns of low-income households, but is modified to provide the RDA's plus 5 percent or more for food energy, and 8 nutrients. Low-income household food consumption patterns, according to the 1965-66 survey of household food consumption, included less than recommended allowances for calcium for 4 of the 18 sex-age categories used in USDA estimates; iron for 5 categories; Vitamin B6 for four, and magnesium for the 13 sex-age categories used for those 12 years or older (23).

The main difference between the Thrifty Plan and the other USDA plans is that the former includes less meat, poultry, fish, and eggs and more dry beans, dry peas, and grain products. For three of the age-sex categories in the Thrifty Food Plan the fat level is also greater than the upper limit for the other USDA food plans (23, p. 21).

The widely varying costs for various levels of nutritious diets were recognized as long ago as 1933 in a USDA study (35).

Households, in which means are available, typically spend more on food than is required to provide a nutritionally adequate diet. The average family in the United States spent \$30.32 a week for all food or \$134.07 a month, in 1972-73 (latest year for which comprehensive data are available) (17); about four times the amount of the Foytik estimates.

PERCENTAGE OF THE POPULATION THAT CAN AFFORD AN ADEQUATE DIET

USDA estimates of costs for one month for the Thrifty, Low-Cost, Moderate-Cost, and Liberal food plans for a family of four were \$164.80, \$213.50, \$268.00, and \$322.50, respectively in March 1976 (37, p. 26). The family included two adults and two children, one aged 6-8 years and one aged 9-11 years.

For the Bureau of Labor Statistics' standard family (a husband and wife, a girl of 8 and a boy of 13), costs were estimated at \$250.25 (lower), \$321.58 (intermediate), and \$404.67 (higher). In the autumn of 1976, food was 30 percent of the lower budget, 24.0 percent of the intermediate budget, and 20.4 percent of the higher budget (45, pp. 2 and 7). According to the remainder of the budget like that specified by the Bureau of Labor Statistics for the standard family, this family needed approximately \$10,041 a year in budgeted income to afford the components of the USDA *low-cost food plan*; \$16,236 for the moderate-cost plan; and \$23,759 for the liberal plan. Approximately 70 percent of the families in the United States in 1976 could afford the low-cost plan; 45 could afford the moderate-cost plan; and 21, the liberal plan (42, p. 2). Estimates have been made of food plans that families of different sizes and incomes could "usually afford" in the winter of 1976 (22). But not being able to afford the plans does not necessarily mean families were undernourished or malnourished.

EFFECT OF INCOME AND EDUCATION ON NUTRITION

Of all low-income households in the United States, 50.3 percent had "good" diets in 1965-1966, according to the USDA Survey of Household Food Consumption in that year. "Good" was defined as meeting the Recommended Daily Allowance specified in 1963 for seven nutrients in 1965-66 (39, p. 1). This percentage was down 10 percent from that in 1955 (18, p. 3). (There are no studies to be found on whether diets of the poor have deteriorated more than those of higher income groups.) Of diets analyzed in 1965, 21 percent were poor in that they provided less than two-thirds of the allowances for one or more of the seven nutrients, up 5 percent from the 1955 level. Dietary adequacy, measured by the percentage

² The seven nutrients Pennington found to be most highly correlated with others needed for adequate human nutrition were Vitamin B6, magnesium, pantothenic acid, Vitamin A, folacin, iron and calcium. A diet including suggested daily intakes of food containing these nutrients and following a set of guidelines formulated by Pennington will have the maximum likelihood of meeting requirements for 45 nutrients now recognized as essential (20).

of diets meeting the allowances for all seven nutrients, was related to family income. At successively higher levels of income, a greater percentage of households had diets that met the allowances (18, p. 3). Of the persons sampled in 1965 with incomes under \$3,000, 36 percent had poor diets, while 9 percent of those with incomes \$10,000 and over had poor diets (39). According to the 1965 survey, and the findings of the first Health and Nutrition Examination Survey, calcium, Vitamin A value and ascorbic acid (Vitamin C) are particularly likely to be below recommended allowances for low-income people (14, p. 16; 43, p. 28). The 1955 USDA survey revealed that percentages of those with inadequate diets rose markedly as incomes fell from \$3,000 to \$1,000 or less (38, p. 33). Of farm families in the South with incomes under \$1,000, 71 percent had poor diets (38, p. 35). The NCR-90 regional project data (25) showed families with lower incomes, which in many cases cannot sustain incomes, frequently ran out of food. Such instability is apparently an important link between income and nutrition. The "food problem" of the families in the study may have in part been due to occasional feasts, an offset to what may be a drab existence (10, p. 104).

To quote from the *Highlights of the Ten-State Nutrition Survey*, "... income is a major determinant of nutritional status (but) other factors such as social, cultural, and geographic differences also have an effect on the level of nutrition" (44, p. 9).

Education is one of the identified factors. From analyses of the 1955 household Food Consumption Survey data, Meyers concluded:

The more educated homemaker spent more on the average for food per person in her household. She tended to pay about the same or a little more per pound for each of the major food groups than the less educated homemaker. She included more milk and fruits and vegetables and less flour and cereals and dried beans and peas. The better educated homemaker more often fed her family well, but many homemakers with college training, especially those from low-income city households, still did not plan diets that met standards recommended by the National Research Council.

From special analyses of the effects of income and education for which the 1965 Household Food Consumption Survey data was used, Meyers concluded:

Regardless of the amount of money spent per person for food, among households with less education, there were larger proportions with poor diets. Among households earning under \$3,000 the percent of poor diets increased as education decreased. The same was true for upper income households (18, pp. 4 and 5).

FOOD SELECTION AMONG THE POOR AND INFLUENCES UPON THESE SELECTIONS

The food purchasing agent for low-income households, like the purchasing agents for almost all other households, faces a budget constraint. For the "poor" household's purchasing agent, it may be stringent. Hammett and Van de Mark, reporting their study of food choice, wrote, "The decision to accept or reject individual products was made after the customer weighed attributes in meeting needs, income and tastes, nutritional knowledge, marketing techniques, pantry inventory, meal patterns, and competition of other goods and services" (13, p. 45).³ James T. Parker of the Division of Adult Education of the U.S. Office of Education reported at the 1976 Agricultural Outlook Conference that he had found consumer economic expertise and nutrition knowledge directly related to income (33, p. 63).

The "poor" household has the greatest need for careful shopping practices and valid information about products, marketing practices, grades and labeling, and nutritional values of foods, if its members are to maximize nutritional well-being or other aspects of utility related to food from their limited purchasing power. But the available evidence indicates low-income homemakers have lower "shopping practice scores" (comparison shopping, buying foods when on sale, analyzing price per unit) in many instances and use fewer "shopping aids."

Van de Mark and Hammett found "Shopping practice scores . . . showed relationships to income level. With greater income, adaptive scores increased . . . higher income, larger families were making more use of shopping aids (shopping lists and articles about food)" (47, p. 31). "Homemakers with low adaptive scores would seldom use a shopping list, buy foods on sale, shop for less expensive items, compare package size and price or read articles about food" (47, p. 9). Food and Drug Administration analysts also found poor shopping practices (not making a shopping list, reading for specials, checking lists of ingredients, using unit pricing, looking for open dates and using nutrition labels) to be associated with lower socioeconomic status (46). Hammett and Van de Mark stated: "The more highly educated women in families with greater annual or per capita incomes were more likely to use food advertisements, to try new products . . ." (13, p. 13).

Marketing knowledge scores in the Hammett-Van de Mark study were based on identifying the shield used for

³ The statements in the article were based on findings of 13 studies conducted between 1958 and 1972 under Southern Regional Food Marketing Research Projects SM-13, SM-13R, SM-13 2R, and SM-35; data were collected from 8,713 Alabama urban families.

Government beef grades, naming grades for eggs, milk, and beef, and comparing package size and price.

About half of the homemakers with low per capita incomes had low scores in marketing knowledge, while one-third or more having larger incomes scored high. Homemakers who scored high in marketing knowledge usually scored high in nutritional knowledge, and high scores in both tests were more frequent among women of greater education or higher per capita incomes (13, pp. 17 and 18). Homemakers were more concerned with buying and preparation of food than with nutritional values. Meal planning ideas and food buying information, primarily 'specials' were more important to the homemaker with average or low income (13, p. 23).

Fewer low-income homemakers recalled seeing a nutritionally educational display. Among those who did, lower income respondents recalled fewer items and a higher percentage failed to recall its themes (13, pp. 26 and 27). When homemakers were exposed to three newspaper articles containing nutritional information, lower income homemakers "more often recalled the articles about grade labeling and use of broilers in all types of meals Cookery methods were most appealing to . . . those of lower-income ranges. The few who recalled information about production or marketing were almost entirely those who had education beyond high school" (13, p. 28). Low-income homemakers listening to broadcasted educational messages recalled cookery methods and the fact that broilers were suitable for all types of meals rather than information about nutritive value of poultry meat, the fact that broilers are an economical source of protein, the meaning of grade and inspection labels, or the marketing, purchase and storage of broiler meat (13, pp. 28 and 29). In purchasing broiler meat, economy, rather than nutritive value, variety or versatility, was the most important factor to low-income families.

Information sources that influenced these low income homemakers' food purchases were found to be mass media, such as radio and television; printed sources, such as newspapers, magazines, recipes, and cookbooks; personal influences, such as friends, relatives, or sales persons; and the merchandising practices in stores. Information about cost or quality of a food usually came from friends or relatives of homemakers in low-income families (13, p. 32). One-fourth of the families—mainly younger, low-income and nonwhite—in a 1958 survey had no newspaper that regularly carried food advertising (13, p. 32).

"Per capita income . . . was a major barrier to free food choices because of such contingency factors as family size, per capita meal cost, education of the principal provider or age of the youngest family member." "Per capita income is the family attribute most closely

related to purchase of food" (13, pp. 37, 38, 40; 11, p. 20). Low income was found to be particularly related to routine (habitual) food choices (12, p. 271), which leads to a monotonous diet.

According to the 1965 Household Food Consumption Survey, groups which spent less than \$6 per person per week (for food eaten at home) generally used a large share of each food dollar for cereals and bakery products and less for meat, poultry, fish, and fruits and vegetables than those spending larger amounts (39, pp. 58-145). Cereals and bakery products are relatively "filling" and properly chosen cereals are relatively cheap sources of nutrients (34). However, they contribute to the problem of obesity among the poor. Lower income levels have been found to be associated with a higher prevalence of obesity for women (43, p. 28).

SOURCES OF FOOD USED BY THE POOR

The poor generally obtain food from the same sources as other income groups. They buy from food retailers of all sizes and types. They produce their own food from homegrown or purchased raw materials. They receive gifts from friends, relatives or neighbors, borrow, and receive donations under Governmental or private food programs (4, 28, 29, 30, 16). The question that has been a source of controversy is do they pay more for the same quantity of food of the same quality?

From his survey of the existing literature on this topic, Samli concluded: (1) the poor pay more because the stores located in the ghettos charge more; (2) the poor pay more because stores where they shop charge them more; and (3) the poor pay more because the prices of the goods they purchase are going up faster than the remaining goods and services (26, p. 48). Samli and others have found this to be true for both the urban and rural poor (26, 4, 28, 15, 32, 3). They paid more in part because they have less time and energy for shopping, they are less mobile, and stores they patronized are convenient to where they live or accept food coupons.

Thus, the poor are apparently disadvantaged in their food selection by initially having more stringent budget constraints than the nonpoor. They often pay higher prices for food, generally because of where they shop, further limiting their access to food. And they lack knowledge, associated with their generally lower educational attainments, concerning markets, marketing, products and their prices. Lastly, their level of shopping expertise is lower.

However, the poor have been found to be relatively nutritionally efficient in their food spending, out of necessity (2, p. 7; 39, p. 6). Among 3,860 urban households in the United States surveyed in the spring of 1965, households with less than \$5,000 in annual income were consistently obtaining more nutrients per dollar of food expenditure and more calories per dollar of food expenditure than those with higher incomes. Coltrin and Brad-

field in an article reviewing studies of low-income consumers noted:

The trends in grocery buying suggest an attempt on the part of the low-income individual to stretch his food bill. Canned and dried milk, canned fruits and vegetables, breads, potatoes, rice and other cereals substitute in part for the purchases of meat, fresh milk, fresh fruit and frozen food products (6, p. 17).

EFFECT OF NUTRITION EDUCATION ON FOOD SELECTION AND NUTRITION AMONG THE POOR

Trienah Meyers in an address in 1970 stated:

A large amount of manpower and dollars has been spent by government, universities, foundations, and the private sector on nutrition education but there really have been no *prolonged* evaluations which would permit us to generalize to develop a solid framework for concepts or to establish a case for this kind of education (18, p. 2).

Representative Fred Richman has characterized the Federal nutrition effort as "a conglomeraton of uncoordinated Federal Programs more notable for its gaps than its ability to provide the consumer with reliable and useful guidance in the purchase and preparation of nutritious foods" (31, p. x). A recent congressional study entitled "The Role of the Federal Government in Nutrition Education" emphasizes the extent of this fragmentation in its analysis of 30 programs in 11 agencies of the Department of Agriculture and the Department of Health, Education and Welfare and in two regulatory agencies, all of which are concerned with nutrition education. In only 14 of these programs could the proportion of their budgets actually expended on nutrition education be identified, and reliable data on program impact was lacking in almost every case (31, p. x).

The 16 programs that could be identified whose aim in whole or in part was the dissemination of nutrition information to those in low-income groups included the Food Stamp, Child Nutrition, and Head Start programs, programs of the Bureau of Community Health Services, and USDA Extension Service programs (31, p. x).

The major governmental nutrition educational effort has been the Expanded Food and Nutrition Education Program of USDA's Extension Service. The effort was authorized in November 1968, and implemented in early 1969, in an attempt to upgrade diets of low-income families. The program has succeeded in reaching these families and in improving food consumption practices appreciably (7, Feb. 1972; 19). It relies on 4-H Clubs in reaching youth from 9 through 19, and on a one-to-one approach, concentrating on improving the food-related practices of homemakers. The latter approach appears

relatively effective, but some 80 percent of the eligible population is not being reached (31, p. x and pp. 30-41). The 4-4-2-2 diet pattern is used as the means for achieving nutrition adequacy, an approach open to question (20, Foreword).

SUMMARY AND CONCLUSIONS

The "poor" in the United States, except those who do not receive food aid and who cannot afford a diet as described in the Thrifty Food Plan without allocating more than a third of their incomes for food, could be well nourished in the sense of obtaining all of the nutrients currently known to be required—if they selected the proper foods. They could buy the components of a nutritionally adequate diet for considerably less than the cost of the foods included under the Thrifty Food Plan if palatability and variety were not factors in their choices. But choosing unpalatable foods would be irrational since they would not be eaten. To escape monotony is a universal human desire (27, chs. 2 and 3). Income and educational levels affect food choices and nutrition. Those with higher levels of income and education generally attain higher levels of nutritional well-being. They have higher levels of consumer economic expertise and knowledge concerning nutrition. Nonetheless, the poor appear to be relatively efficient in obtaining nutrients per dollar of food expenditure, despite the fact that they often pay higher prices for food.

Models for effective nutrition education efforts exist. However, Federal governmental efforts are uncoordinated and even the major Federal program, the Expanded Food and Nutrition Education Program (EFNEP), fails to reach about 80 percent of its target population.

Improving the diets of the poor involves several efforts:

- Increasing their access to food by providing them with higher stable incomes, or the opportunity to earn such incomes, incomes that will be high enough so they can buy a nutritious market basket of enjoyable food for nutritionally balanced and adequate diets;
- Modifying or adding to the food delivery system to facilitate access for the poor to food of acceptable quality at prices comparable to what others pay for the same products;
- Increasing their consumer economic skills especially in effective, efficient buying;
- Increasing their level of applicable nutritional knowledge and skills in food selection, preparation, storage and use.

Education to emend food choices involves changing tastes and preferences in some cases and enhancing or implanting knowledge and skills in others. Improvement of the diets of the poor in this manner should be an explicit policy.

NEEDED RESEARCH

A partial list of research needs in this area involves topics within the purview of every member of the health team as well as economists, sociologists, anthropologists, nutritionists, and home economists. Broad areas in which research is needed include:

- Surveillance and assessment of the nutritional status of the poor, as well as all others, but primarily the poor since they are the persons most "at risk."
- Diets of the poor with emphasis on relationships to ethnicity, rurality, income, educational level, geographic location, attitudes, and other factors found to be relevant. The survey on which the Thrifty Food Plan was based was too limited. Although the 1977 Food Consumption Survey should be helpful. Researchers and nutrition educators need much more information if they are to work towards solution of the diet problems of the poor.
- Nutrients required by the entire population and special dietary needs of subgroups.
- Consumer economic knowledge of the poor. We need much more knowledge concerning their shopping practices, sources of information used, reactions to advertising, knowledge of marketing, and their knowledge of grades and labeling, especially nutrition labeling.
- Consumer behavior of the poor. We need knowledge concerning the food choices they make and why, the effects of advertising on their choices, and the effects of educational programs and food programs on their choices.
- Nutritional knowledge of the poor. An assessment is needed of their existing knowledge and how they use it.
- Food consumption habits and changing food choices because of changing lifestyles of the poor and others. No studies at all can be found of diets of heterogeneous living units. All nutrition educational programs, including EFNEP, appear geared to the homemaker who is assumed to be female and in sole charge.
- Food use.
- More evaluation of current nutrition education programs.

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FOOD PROGRAMS AND NUTRITIONAL INTAKE: WHAT EVIDENCE?

By Benjamin Sexauer*

ABSTRACT

Nutritional evaluations are difficult because the current understanding of dietary needs and the relationship between health and nutrition is incomplete. The Food Stamp Program's nutritional impact may be reduced because aid is not always used to improve diets. However, it has helped eliminate chronic hunger among the very poor. The impact of the National School Lunch Program is difficult to estimate because it supplies a relatively small proportion of total nutritional requirements. The Supplemental Food Program for Women, Infants, and Children (WIC) is uniquely important since early nutritional deficiencies can have long term effects on children. Existing studies indicate that food programs should include a nutrition education component, and the effectiveness of nutrition education when coordinated with a food assistance program should be researched further.

KEYWORDS: Food aid programs, nutritional impacts, nutritional program evaluation.

INTRODUCTION

Over \$7 billion per year is spent on USDA programs for which improving the nutritional status of participants is a major policy goal (8, p.10).¹ As indicated in the authorizing legislation, a primary goal of the Food Stamp Program is "to raise levels of nutrition among low-income households." A major objective of USDA's National School Lunch Program is "to safeguard the health of school children by improving and/or maintaining levels of nutrition." How well the various food programs are fulfilling their nutritional objectives is, therefore, a question of the upmost relevance to policymakers. The major part of this article summarizes what is currently known about the nutritional implications of the various food programs. Inferences from the existing research evidence for nutrition education efforts are examined, and suggestions for further research are made.

CONCEPTUAL AND METHODOLOGICAL ISSUES

Nutritional evaluations of public food assistance programs present a number of complicated, sometimes insoluble, problems. First, the current understanding of dietary needs is incomplete and imprecise. There are some 45 essential nutrients, but Recommended Daily Allowances (RDA's) have been established for only 17. Moreover, nutritional evaluations are typically based on less than 10 nutrients.

Second, current knowledge of the relationship between health and nutrition is incomplete. The health implications of slight or shortrun deficiencies in certain nutrients are unknown. We are not sure what good nutrition is, particularly concerning the nonnutrient portion of the diet. Only recently have the long-term health implications of the nonnutrient part of the diet (salt, fiber, and chemical additives) received attention.

¹ Italicized numbers in parentheses refer to items in References at the end of this article.

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Third, people's nutritional needs vary not only because of sex, age, body size, and activity, but also because of genetic makeup and physiological state. Moreover, a person's needs vary over time. Therefore, although the RDA concept is a practical necessity, its limitations should be clear. RDA's are set at levels which assure that the nutritional needs of virtually all healthy persons are met. RDA's are not minimum nor even average requirements. They exceed the requirements of most individuals.

Fourth, obtaining information on nutritional status is expensive and the possibility of error is high. The major sources of nutritional status information are dietary intake, biochemical tests of blood and urine, clinical examinations by doctors and dentists, and anthropometric measurements. USDA is the primary collector of dietary intake data. Obtaining accurate data requires participant cooperation and relies on participants' memories for the recall methodology. In addition, the nutrient content of two diets that appear similar in food content can vary. Different varieties of the same commodity may have different nutrient levels. Growing conditions, processing, and preservation affect nutrient content, as do storage and cooking in the home.

EVALUATION OF SPECIFIC PROGRAMS

THE FOOD STAMP PROGRAM

The evaluation of the initial pilot program in 1961 was very encouraging concerning the nutritional impact of food stamps (5, p.30). The nutritional evaluation was based on dietary surveys of participating and nonparticipating households in Detroit, Michigan, and Fayette County, Pennsylvania:

- Food consumption increased 85 to 95 cents per dollar of bonus coupons.
- In Detroit, 48 percent of the participating low-income families had good diets as opposed to 28 percent of the nonparticipants. In rural Fayette County, the figures were 39 and 28 for participating and nonparticipating low-income families. A "good" diet was defined as supplying 100 percent or more of the RDA for each of 8 nutrients.
- Nutrients most likely to be deficient in the diet of low-income Americans were calcium and ascorbic acid, followed by thiamine and vitamin A. Significantly more of the participating families met their dietary requirements for these four key nutrients than did nonparticipants.

The marked nutritional success of the pilot projects may be attributed to several factors (5, pp.4-12):

- An experimental program is likely to receive a greater degree of cooperation, interest, and support than might prevail in the longer run.
- USDA personnel maintained close supervision.
- The families paid the amount they normally spent on food to receive their allotment of coupons.

- Nutrition education was an integral part of the program.

There is no evidence that the operating Food Stamp Program has produced nearly the nutritional improvement of the pilot program. The existing studies of the program do not provide very conclusive evidence on its nutritional impact and are based on surveys in only a few, small geographic areas. The major problem is that the basic nationwide data have been unavailable. The 1965 USDA Household Food Consumption Survey occurred before the major food stamp legislative reforms of 1970-71. The 1977 Household Food Consumption Survey should provide the first opportunity for a comprehensive evaluation of the program's nutritional impact.

The existing studies tend to indicate some nutritional improvement due to food stamps, but not a marked change. A study by Patrick Madden evaluating the effect of food stamps and commodity distribution in two rural central Pennsylvania counties was completed in 1971 (6, pp.69-71):

- Food stamp participants had somewhat better diets than nonparticipants. However, the improvement occurred only during the first 2 weeks after receiving their allotment of coupons and when they had been without income for 2 weeks.
- Food stamp recipients had higher protein and thiamine intakes and, less consistently, increased consumption of phosphorus, iron, riboflavin, and niacin.
- The differences in dietary intake due to food stamps were statistically significant in only one of the two counties.

A survey conducted by Sylvia Lane in Kern County, California found that food stamp recipients had somewhat better diets generally than nonrecipients. Again though, the evidence was not as conclusive as might have been desired (7 p.46).

She found that food stamp participation resulted in higher average levels of intake for calories, protein, calcium, iron, thiamine, and riboflavin per nutritionally equivalent person than for nonparticipants.

The nutritional impact of the Food Stamp Program seems to be less than might be desirable for two reasons. First, a significant portion of the benefits derived from food stamp participation frequently do not go toward increased food expenditure but are used to augment the family's general purchasing power. Second, food stamp recipients purchase more of the foods they are used to rather than items which would remove the nutritional deficiencies in their diets.

Nevertheless, the Food Stamp Program, following the reforms of 1970-71, must be credited with helping to eliminate the kind of chronic hunger among the very poor whose documentation shocked the public in the late sixties (4). The problem was worse among rural Southern blacks. For these people, the overwhelming problem was the lack of sufficient funds to purchase enough food.

National School Lunch Program (NSLP)

The National School Lunch Program (NSLP) aims to provide an average of one-third of each child's daily diet (based on RDA's) free or for a reduced price. The program's nutritional character is built upon a meal standard which requires specified quantities and groups of food called the Type A pattern. The NSLP was the recent focus of a major General Accounting Office (GAO) study (2). Analysts found that the current knowledge of the program's nutritional impact is largely inconclusive. A major complexity in determining the NSLP's nutritional effect is the relatively small proportion of a child's total weekly nutritional requirements which the program can provide. If one-third of the RDA is provided 5 times per week, only 20 percent of the child's total weekly nutritional requirements are covered by the program.

The GAO report does, however, raise several important concerns about the program's nutritional effectiveness:

- The program provides an important source of nourishment for many schoolchildren,
- but may promote obesity in others.
- The program is not very effective in meeting the most common nutrient deficiency among schoolchildren, iron deficiency (2, p.134).

The analysts stress that the NSLP's nutrition content should be designed to complement the home diet.

Another problem is that the lunch is often served in a form which contributes to plate waste.

The evidence from the Ten State Nutrition Survey made by the U.S. Department of Health, Education, and Welfare would seem to support the first and third conclusion of the GAO report (2, p.29):

- NSLP provides approximately half the daily RDA for protein, calcium, riboflavin, and vitamin C; one-third the RDA for vitamin A; one-fourth the RDA for food energy and thiamin; and one-fifth the RDA for iron.
- NSLP raised the average intake of vitamin A and riboflavin to the RDA standard. However, NSLP was relatively ineffective in raising average iron intake to RDA standards.

A Cornell University study completed in 1972 supplies further evidence of the nutritional impact of the NSLP (6, p.35-36):

- The nutrient content of school lunches was superior to that of bag lunches carried from home.
- Although NSLP helped the at-home diets meet the RDA's, total diets were surprisingly deficient in many cases.
- Improvements in nutrient intake were especially large where free school breakfasts were served in addition to the school lunch.
- The nutrition knowledge of the mothers interviewed was very poor and that of the children, worse.

- Weight and height gains were greater than normal. However, those overweight at the beginning of the year gained proportionately the most.

This last point supports the second conclusion of the GAO report.

In September 1977, USDA proposed new regulations for the NSLP which would do much to alleviate the concerns raised in the GAO report (1, pp.2-4):

- Different meal patterns would be provided for each of five age groupings of children.
- Lower fat content options would be provided.
- Special attention would be paid to iron and vitamins A and C; and salt and sugar content would be reduced.
- Alternatives to the Type A lunch pattern will be assessed.

THE SUPPLEMENTAL FOOD PROGRAM FOR WOMEN, INFANTS, AND CHILDREN (WIC)

The most complete information on the nutritional effect of this program is provided by a study carried out by the Nutrition Department of the University of North Carolina and the Research Triangle Institute. The evaluation included 9,867 women and 41,330 infants and children. The major findings are quite encouraging (7, pp.31-32):²

- Participation was associated with an increase in the rate of growth in weight and height, when all groups of children were combined.
- The program was associated with an increase in the mean birthweight of babies.
- The incidence of anemia, highly prevalent among the infants and children examined, was reduced about 40 percent after 6 months.
- For the children examined, average initial intake was equal to or greater than the RDA's for all nutrients except iron. The program increased iron, vitamin A, thiamin, and ascorbic acid intake for infants. While there was no increase in calories, the intake of all monitored nutrients was increased for older children.
- Participation meant more weight was gained during pregnancy.
- The occurrence of anemia was reduced, but only during the last 3 months of pregnancy and in post partum women.
- The program increased the intake of protein, calcium, iron, vitamin A, thiamin, riboflavin, niacin, ascorbic acid, and phosphorus during pregnancy. For all but the last two nutrients, daily intake averaged below the RDA prior to participation.

² Some questions have been raised about the statistical validity of the results of this study.

- Post partum women increased their consumption of thiamin and ascorbic acid by participating in WIC. However, their nutrient deficiencies for iron, vitamin A, riboflavin, and niacin were not improved.

This study provides strong evidence that the WIC program has a definite positive impact on nutritional status. Its effectiveness is uniquely important, since nutritional deficiencies during pregnancy and during early childhood can have long term effects on the child's capabilities and development. Although this evaluation found that average daily nutrient intake of infants and children was sufficient except for iron, average figures can mask over inadequate levels among a significant proportion of the population studied. WIC was associated with an increase in nutrition education in 63 percent of the clinics survey in another study (7, p. 35).

THE EXPANDED FOOD AND NUTRITION EDUCATION PROGRAM

Although not normally listed as a USDA food program, the Expanded Food and Nutrition Education Program (EFNEP) is a nutrition education and advising program aimed at very low income households. USDA funds the program and the Cooperative Extension Services administer it in the States. EFNEP is essentially based on home visits by program assistants. An evaluation for one county in Pennsylvania found no nutritional impact that could be attributed to the program (6, p. 70). The available information for California, although not very vigorous, is more encouraging (9, pp. 6-8):

- Only 10 percent of the participants had adequate diets prior to enrollment, based on a certain number of servings per day from each of the 4 basic food groups. After participation, 30 percent had adequate diets.
- The big improvements were in consumption of fruits, vegetables, and milk. Before enrolling, only 24 percent of the people were consuming the recommended 4 daily servings of foods from the fruit and vegetables group. After a year in the program, 50 percent were.

CONCLUSIONS

SOME IMPLICATIONS OF THE EXISTING STUDIES

Food programs should include a nutrition education component. The success of the Pilot Food Stamp Program, WIC, and EFNEP tend to support this conclusion. The 1977 Farm Bill calls for increased nutrition education efforts for food stamp recipients (3, p. 7). Requiring the applicant to participate in a 1-hour nutrition education program could be made a requirement and film or videotape could be utilized as the major educational method.

An education program in the Nation's schools could be made an integral part of the Child Nutrition Programs. In addition, if the Federal Government creates public sector employment for the jobless, nutrition education activities tailored after EFNEP may offer jobs with considerable social benefits. Low skilled, low income persons could be trained to be the program assistants who make household visits. Above all, the effectiveness of nutrition education, particularly when coordinated with a food assistance program, should be placed high on the agenda for further research.

FURTHER RESEARCH NEEDS

The current research base on the nutritional implications of the various USDA food programs is not sufficient for informed policy decisions. Money invested now in strengthening the data and research base could well create major payoffs in improving the effectiveness of our nutritional improvement efforts. A sound research foundation could help considerably in the resolution of major policy issues. Our current knowledge on the effect of food stamps is particularly limited, given the billions that are spent on the program. The recent policy debate on eliminating the food stamp purchase requirement was not able to draw on a sound understanding of the nutritional implications of the existing program and the proposed alternative. If and when cashing out food stamps is debated as part of a comprehensive welfare reform, it is hoped that an adequate foundation of information will exist on the nutritional effect of each approach.

The most pressing research need is to assess the nutritional implications of the existing food programs. If the research funds are made available, these nutritional effectiveness studies could form a part of comprehensive program evaluations to determine the extent to which the programs achieve their legislative objectives. In the long run, researchers should address the question of what is the best way to achieve nutritional improvement goals. Existing programs and possible alternatives should be compared based on their cost effectiveness in providing nutritional improvements. It is hoped that some day our research will be able to provide benefit-cost information programs and on possible alternatives. This research would indicate what nutritional improvement is gained per dollar of program expenditure.

Food program nutritional effectiveness research will have to include topics addressed by other authors in this seminar, such as program participation and eligibility. The effect of program overlaps cannot be overlooked. Moreover, USDA should expand its research to include the nutritional impact of nonnutrition policies and programs. Everything from marketing orders to the Federal income tax may affect nutrition.

USDA is responding to the research need. Both the Food and Nutrition Service and Economics, Statistics,

and Cooperatives Service are significantly increasing their research on food programs and nutrition. The 1977 Nationwide Food Consumption Survey will provide a timely new data source. The Food and Nutrition Service has proposed major nutritional effectiveness analyses of the Food Stamp and School Lunch Programs. It is hoped that these USDA research plans will receive adequate funding.

Surveys are an expensive but crucial source of data for research on food programs and nutrition. One way to reduce data gathering costs would be to coordinate better the efforts of the different government agencies and departments. For example, the Health and Nutrition Examination Study (HANES) conducted by the U.S. Department of Health, Education, and Welfare, because of the absence of one question, can provide only weak evidence on the nutritional implications of food stamps. The questionnaire established whether the individual or family was registered for food stamps, but collected no information on the dollar value of the coupons received or the purchase price. Future coordination could eliminate such problems.

In discussing future research needs, the existing knowledge, quite considerable in some areas, should not be overlooked. I have outlined only some of the major results of the existing studies. Future research should draw upon the existing research base. Much can be learned from the methodological success and failures of prior nutritional evaluations. In any future work, quality must always be given priority over quantity. One rigorous, well conducted, unbiased, and complete analysis is worth any number of poorly conducted pieces of research. Weak or incomplete research in this area is

dangerous as inaccuracies in research results may mislead policymakers in their decisions.

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FOOD EXPENDITURE CONSEQUENCES OF WELFARE REFORM

By William T. Boehm and Paul E. Nelson*

ABSTRACT

The Administration's proposed Better Jobs and Income Program (BJIP) would combine a jobs program with cash assistance for the poor. The authors examine how a simple cash transfer system might influence aggregate food expenditures relative to continuation of the current programs. Aggregate food expenditures would be largely unaffected by implementation of the BJIP, as would farm value of domestically produced foods. Under the assumptions used, aggregate farm income could be reduced by about \$100 million as a result of the estimated \$0.3 billion reduction in aggregate retail expenditures.

KEYWORDS: Welfare reform, Better Jobs and Income Program, food expenditures, farm income.

INTRODUCTION

On August 6, 1977, President Carter made public the administration's proposal for welfare reform. The proposed Better Jobs and Income Program (BJIP) would combine the largest jobs program since the Great Depression with a program of cash assistance for the poor. The specific program features have two themes.

First, BJIP is to be a welfare assistance mechanism with a central focus on work. Up to 1.4 million subsidized public service and job-training slots will be created in an attempt to assure access to work or training to one adult in every family with children. Second, a simple cash grant system is proposed to simplify and make more equitable the transfer of resources, reduce the potential for error and/or fraud, and improve the overall efficiency of income support programs.

The proposal, when adopted, would eliminate some of the current resource transfer programs. Specifically, it would eliminate the Food Stamp Program (FSP), the Aid to Families with Dependent Children (AFDC), and Supplemental Security Income (SSI). In addition, the payment structure for the earned income tax credit and stimulus portion of the Comprehensive Employment Training Act (CETA) and the AFDC work incentive program (WIN) would be altered significantly. Budgetary aspects of the two systems are summarized in table 1.

OBJECTIVES

Proposed elimination of the Food Stamp Program, in particular, has been the subject of some rather fundamental philosophical discussions. That program was designed specifically to ensure that low-income households have sufficient food buying income to purchase nutritionally adequate diets *and*, as a companion goal, to support farm income. Thus, questions arise as to the potential impact its elimination would have on diets of the poor, food expenditures, and farm income. The key issue we will address is the manner in which a simple cash transfer system might influence aggregate food expenditures compared with continuation of the current programs.

Answering that question is complicated somewhat by the recent decision to eliminate the food stamp purchase requirement (EPR). While this provision will

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Table 1.—The Carter Administration welfare reform proposal

Current Federal expenditures and offset		New program	
	<i>Billion dollars</i>		<i>Billion dollars</i>
AFDC	6.4	Employment and training programs	8.80
SSI	5.7	Cash assistance	19.20
Food Stamps	5.0	Earned income tax credit	1.50
Earned Income Tax Credit	1.3	Emergency assistance block grant	.60
Stimulus Portion of CETA and WIN	5.9	Child care deductions	.60
Extended UI (27-39 weeks)	.7	Total	30.70
Decreases in regular UI outlay (because more persons are employed)	.4	Total additional cost	2.80
Increases in Social Security contributions (because more persons are employed)	.3		
Saving within HEW budget (from efforts to prevent fraud and abuse)	.4		
Reduction in HUD outlays for housing subsidies (as a result of increased cash aid and jobs programs)	.5		
Wellhead tax revenues	1.3		
Total	27.9		

Source: U.S. Department of Health, Education and Welfare. "Welfare Reform." In *HEW NEWS*, Aug. 6, 1977, pp. 19 and 20.

simplify program operations and make it easier for some households to participate, it will almost certainly reduce somewhat the food buying effectiveness of the bonus stamp transfer *relative* to the continued operation of an FSP with a purchase requirement.

While our magnitude estimates derived herein are consistent with accepted theory and the research evidence available, the article is most appropriately considered an exercise in logic. We use known theoretical constructs, previous research findings, and available data to examine this important public policy question.

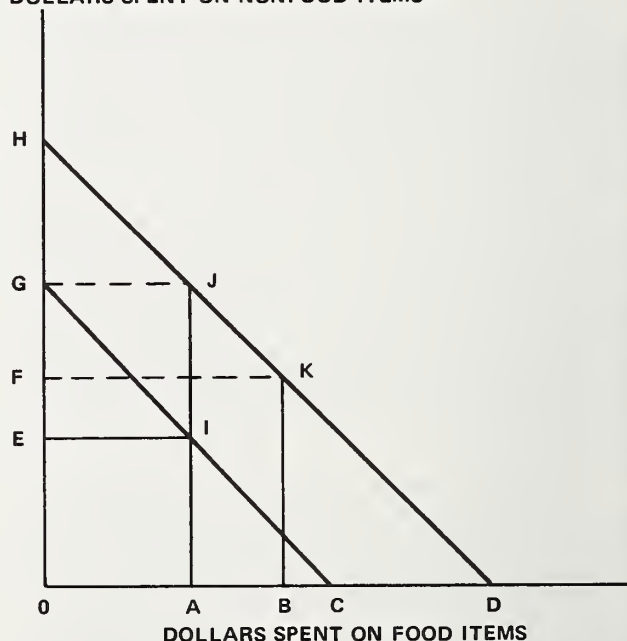
THE CONCEPTUAL MODEL

The consequences of the Administration's welfare reform proposal for food expenditures and farm income are difficult to ascertain. Simply put, the data needed to develop precise magnitude estimates are not now available, especially those concerning human purchasing behavior under alternative transfer schemes. However, through use of generally accepted theoretical constructs from economic theory and available data, it is possible to develop an estimate which, at a minimum, indicates the expected direction of the change. The essence of the theoretical model is presented in the chart.

Suppose that a specific low-income consuming unit could spend its income on only two economic goods—"food" and "nonfood." That household's income, without any Government aid, could be used to purchase OG dollars worth of "nonfood" or OC dollars worth of food. The

FOOD BUYING CONSEQUENCES OF ALTERNATIVE TRANSFER SCHEMES

DOLLARS SPENT ON NONFOOD ITEMS



points along line segment GC represent possible combinations of "nonfood" and "food" expenditures. That is, a household expenditure pattern represented by point I would mean that OA dollars were being spent on "food."

In this case, roughly half the initial total income is voluntarily allocated to food purchases.

Participation in the pre-EPR Food Stamp Program would have required this household to give up GF dollars to obtain food coupons worth OB dollars. If this household chose to use *only coupons* to make food purchases, the expenditure allocation would be at point K. In that case OB dollars (in stamps) would be spent for "food" and OF dollars would be spent for "nonfood." Food expenditures increase quite dramatically in this case but *nonfood expenditures also increase*. Some of the money the household had previously allocated to food (EF dollars) it now may use to increase its purchase of nonfood items. Thus, while all coupons must be spent for food, the FSP is less than 100 percent effective in increasing food spending. The typical assumption, based upon observed behavior, is that bonus FSP dollars have been about 50 to 55 percent effective in *increasing* food purchases.¹

Note that once a household decided to participate in the FSP, it would be *expected* to spend *at least* OB dollars on food. Since food coupons may only be used to purchase food items, the household gains nothing by not using its total allotment of coupons.²

The theoretical effect of eliminating the purchase requirement (EPR) can also be observed by studying the chart. By eliminating the purchase requirement, the household is no longer required to give up any income to obtain food coupons. However, it receives only the bonus stamps. With EPR, the household represented in figure 1 would receive enough bonus stamps to insure that only 30 percent of its net cash income must be allocated to food.³ This household would receive about OA dollars worth of bonus food stamps. If it chose to do so, the household *could* spend only the bonus stamps for food (OA dollars). By doing so, it would release EG of the cash income *previously spent on food* to use for nonfood items. Of course, any combination along line segment JD is possible.

It is clear that for households who previously paid some portion of their income for coupons, more income is released with EPR to buy nonfood items than with the pre-EPR FSP. As for food expenditures, a household's *desire* to spend money on food rather than on nonfood items is more important with EPR than with the pre-EPR

FSP. The shorter the line segment JK in the chart, the less likely this or any other household will be to change its food purchases as a result of EPR. The length of JK for any household is directly related to that household's relative purchase requirement. Thus, food purchases by households with relatively low purchase requirements will not change significantly as a result of EPR.

A simple cash transfer of the bonus stamp value would allow most households more *freedom to spend* the public assistance income transfer. Theoretically, they would not be required to spend any of such income on food; all points along line HD are possible. Realistically, one would not expect any household participating in a public assistance income transfer program to spend less on food than it did prior to the program. OA dollars spent for food would, for such a household, appear to be a lower limit *regardless of the type of transfer*.

This theoretical model provides the basis for making a somewhat conclusive statement about the food buying consequences implied by various purchasing power transfer schemes. *Programs which specifically target the transfer of purchasing power to food will be more likely to influence positively the aggregate food purchases of participating households*. As recipient households are given more freedom to spend (by eliminating the targeted nature of transfer programs), they will likely choose to allocate less of the total transfer to food.

While the model helps to develop an understanding of household behavior under alternative transfer schemes, it suggests very little about the impact of the various schemes on *aggregate food purchases*. The aggregate impacts are conditioned significantly by both *program participation* and the *level of aid*. The more specific a program is in targeting the transfer (to only food, for example), the less likely people are to participate (accept the transfer).

For example, only about half of the more than 12 million technically eligible households (35 million persons) have historically participated in the FSP (5).⁴ Over time, the participation rate has been directly related to the benefit level. In April 1977, for example, an estimated 66.7 percent of eligible households with gross incomes less than \$1,200 per year participated in the FSP. Only 37.8 percent of the eligible households with gross incomes over \$8,400 per year participated. Even with the purchase requirement eliminated, participation will probably not exceed 65 percent of those eligible (5).

In contrast, a system of cash transfer would likely cause a greater proportion of the target population to participate, for two reasons. Administration and eligibility requirements would be simplified, and there is most likely less of a social stigma attached to the acceptance and use of cash rather than coupons. HEW estimates

¹ The effectiveness of the program varies by recipient group and over time. Estimates range from 0.40 to 0.86. The most frequently used assumption is about 0.55. Estimates are reported in (1, 7 and 9) among others.

² It is admitted that "black market" exchange of coupons for cash is always a possibility. Since food quantities are not "rationed" by coupons, there would appear to be less of an incentive for noneligible households to purchase coupons through a "black market" at a discount. At any rate, "black marketing" has not been identified as a serious problem with the FSP.

³ This language is adapted from the Food and Agricultural Act of 1977, signed into law recently by President Carter.

⁴ Italicized numbers in parentheses refer to items in References at the end of this article.

that BJIP would impact on 14 million of the potentially eligible households. Of course, the *total* amount of the transfer would likely be larger for programs with higher levels of participation.

While the theoretical model suggests that a food stamp program, either with or without a purchase requirement, would be more effective in increasing the food purchasing of participant households, it indicates little about which type of transfer scheme would ultimately influence *aggregate* food purchases the most.

DEVELOPMENT OF THE AGGREGATE IMPACT ESTIMATE

The preceding theoretical discussion provides a basis for development of the magnitude food expenditure impact implied by the welfare reform proposal, BJIP. The approach is to first develop a base estimate of food expenditures for 1978 by factoring out the food buying influences of the programs to be eliminated by BJIP. This base is then adjusted by adding the estimated influences of the present assistance programs assuming the elimination of the food stamp purchase requirement is in effect. Finally, we adjust the base to reflect the influences of the cash assistance transfer proposed by the BJIP.

In developing this estimate, we largely ignore the food buying influences of the employment and job training program. We assume that the positive influences of these programs on food buying will likely be offset by the elimination of the CETA and WIN programs, the extended unemployment compensation, the wellhead tax revenues, and the approximately \$1.6 billion in other offsets (see table 1). All calculations needed to develop the estimate are summarized in table 2.

THE BASE

Total food expenditures for 1978, using the USDA estimate that food prices next year will increase by about 6 percent, will likely be about \$220 billion (3). The cost comparison for the welfare reform proposal (table 1) was based on the assumption that expenditures in 1978 for bonus food stamps would be \$5.0 billion; AFDC payments \$6.4 billion; and payments under the SSI program would be \$5.7 billion. These programs are, as has been indicated, proposed for elimination by the BJIP.

As mentioned earlier, bonus food stamps have been about 50 to 55 percent effective in increasing food expenditures. In 1978, therefore, an FSP with a purchase requirement would account for about \$2.75 billion (1.25 percent) of the total expected food expenditures. With the purchase requirement eliminated, the free stamps would be about 40 percent effective in increasing food expenditures.⁵ This value reflects the fact that households who previously had rather substantial purchase requirements will have considerably more freedom as to how much cash they allocate to food. At the \$5 billion level

Table 2.—Food expenditure calculations, 1978

Alternatives	Expenditure
	<i>Billion dollars</i>
<i>With current programs</i>	
Estimated food base expenditures, 1978:	215.32
Due to Food Stamp Program	+2.75
AFDC and SSI	+3.63
Minus 10 percent of the \$17.1 billion transfer from taxpayers	-1.70
Estimated retail food expenditures, 1978 ¹	220.00
<i>With EPR</i>	
Estimated base food expenditures, 1978:	215.32
Due to Food Stamp Program	+2.34
AFDC and SSI	+3.63
Minus 10 percent of the \$17.95 billion transfer from taxpayers	-1.79
Estimated food expenditures, 1978	219.50
<i>With BJIP</i>	
Base food expenditures, 1978:	215.32
Due to \$19.2 billion cash transfer	+5.76
Plus Additional \$1 billion in "other programs" ²	+1.15
Minus 10 percent of the \$20.2 billion transfer from taxpayers ³	-2.02
Estimated retail food expenditures with BJIP	219.21

¹ This estimate is developed from USDA sources and provides the base number for the entire comparison.

² "Other programs" refer to the employment training, day care deduction, and emergency assistance block grant.

³ The BJIP total cost is estimated at \$30.7 billion, \$2.8 billion more than the current programs. This offsetting tax transfer accounts for the \$19.2 billion in cash assistance *plus* the increase of \$1.0 billion for "other" programs.

of assistance, an FSP without a purchase requirement would be expected to increase food expenditures of low-income households by \$2 billion. However, total participation (and thus program costs) will probably increase as a result of EPR. The estimate by the Congressional Budget Office is that 2.1 million more eligible participants will come into the program but, because of rule changes, 1.3 million persons currently participating will be ineligible (5). Here, we use the expenditure ceiling of \$5.85 billion for fiscal year 1978. Total food expenditures by low income households expected to result from the FSP without a purchase requirement are thus \$2.34 billion.

⁵ Using the 1967 Bureau of Commerce Input-Output Model and a model of the Texas economy, Nelson found that food stamp households given free bonus stamps typically allocated about 30 cents out of each \$1 to food industry sectors. The corresponding value of \$1 of income for other households was about 22 cents (8).

Estimating the food buying influence of the cash assistance programs is more difficult, but an attempt can be made using three pieces of available research evidence. First, low-income households have been observed to spend about 30 to 35 percent of their income on food (11, 12). The *average* propensity to spend for food (APS) is therefore about 0.35. Secondly, the income elasticity of demand for food for low income households has been estimated at about 0.50 (2, 4, 6, 10). Finally, results of several studies suggest that the *marginal* propensity to spend for food (MPS) by low income households appears to be between 0.10 and 0.15 (1, 2, 4, 6, 10, 13).

A basic assumption, we believe, should be that low income households who find their income substantially increased by resource transfer schemes should ultimately be expected to spend their income in about the same manner as other households with that level of income available for spending. Since the income elasticity of demand for food is less than one and the MPS is clearly less than the APS, we believe that the food buying effectiveness of significant cash assistance transfers will certainly be bounded on the low end by the estimated MPS and on the high end by the estimated APS.

Cash transfer schemes will be no more than 30 percent effective in increasing food purchases among low income households. AFDC plus SSI transfers would be expected to account for about \$3.63 billion of the estimated total 1978 food expenditures.

Admittedly, our estimate of 30 percent cash value effectiveness may be high. Some analysts would undoubtedly argue for the straightforward use of the MPS value of 15 percent. An Office of Management and Budget task force in 1969 used a value of 20 percent (9).

Without the programs, taxes from those households now providing the transfer would presumably be less. Their food purchases could be expected to increase about \$1.7 billion (using the estimate of 0.10 for the MPS) (10).⁶ Therefore, approximately \$4.7 billion of the expected \$220 billion (2.1 percent) would be the result of food purchases influenced by Federal programs proposed for elimination by the BJIP.

Aggregate food expenditures would be expected to fall slightly as a result of EPR—about 0.2 percent. With the purchase requirement eliminated, the programs proposed for elimination would be expected to account for about \$4.2 billion of the total food expenditures expected in 1978.

⁶ There is no such thing as a free lunch—even in public income transfer programs. A \$1 grant given to the “poor” implies a \$1 reduction from those taxed to provide the transfer. Income transfer schemes, whether cash or coupon, reduce food purchases by the sector providing the grant. The resultant net effect depends most fundamentally on the difference between the marginal propensities to spend income on food.

THE BJIP ADJUSTMENT

Under the welfare reform proposal, there would be a simple cash assistance transfer of \$19.2 billion, about \$2 billion more than the direct, resource transfer programs proposed for elimination. Assuming that about 30 percent of this transfer would be used to purchase food, its food buying influence would be \$5.67 billion.

There are also \$1 billion in “other programs” which would be added as a result of the BJIP. In the absence of better data, we assume that about 15 percent of this transfer would be spent on food. (The proportion spent on food is reduced to the level of the MPS to reflect the changed nature of the transfer as well as the group likely to receive the aid.) That would add \$0.15 billion to the total food expenditure estimate.

The total additional cost of \$1.0 billion plus the \$19.2 billion in cash transfers will influence, in a negative way, the food expenditures of those households who are taxed to provide the assistance. Again, using the estimate of about 0.10 for the MPS, it is necessary to deduct \$2.02 billion from the base food expenditures ($(\$19.2 + \$1.0) \times 0.10$).

Food expenditures implied by the BJIP are, therefore, about \$219.2 billion (1978 dollars). Thus, while the total transfer increases about \$2.8 billion, total food expenditures would decrease slightly (less than one-half of 1 percent) because of the *changed nature* of the transfer. If no significant shift occurs in either the market basket of foods consumed at home or toward more “away from home” eating by the poor, total farm income would also be largely unaffected as a result of the proposed change.

CONCLUSIONS

- Aggregate food expenditures (at expected 1978 levels) would be largely unaffected by implementation of the BJIP, as proposed. Total 1978 food expenditures with the BJIP would be about \$219 billion—\$1 billion less than the \$220 billion anticipated if current programs were retained and only \$0.3 billion less than expected with EPR in effect.
- The aggregate farm value of domestically produced foods would also appear to be largely unaffected by the proposed change. Assuming that about 85 percent of the \$0.3 billion reduction in aggregate retail expenditures would be associated with the domestically-produced farm foods, aggregate farm income could be reduced about \$100 million as a result of the change (less than 0.2 percent).

These conclusions should be interpreted within the context of the following summary statements.

First, the magnitude estimates are imprecise. At best, they indicate an expected direction of change. Clearly, however, a cash transfer scheme is not as effective in increasing food expenditures as is a targeted program requiring expenditures on food (as does a food stamp pro-

gram). The increased level of funding in the BJIP helps explain, in an important way, why food expenditures and farm incomes, for practical purposes, will likely not decline as a result of the proposed change. If a FSP (even with the purchase requirement eliminated) were retained and this same amount of increase were transferred in the form of free bonus stamps, food purchases would be expected to *increase* above the expected 1978 level by about \$0.84 billion.

The second summary statement is that the conclusions also tend to mask any adjustments in food purchasing which may occur in poor households as a result of the changed nature of the transfer. The relationship between food expenditures and nutritional adequacy of the diet is weak at best. Not enough data exist to either conclusively support or refute the popular belief that increases in food expenditures may be used as a surrogate for improved dietary intake. Furthermore, regardless of the type of food assistance program, increases in food expenditures do not necessarily imply increases in the demand for farm products (and, thus, program support of farm income). Whether or not farm incomes are increased depends most basically on the composition of food items purchased and the extent to which the increased expenditures are related to increases in the demand for marketing services. The available data indicate that food expenditures for the "away from home" category increase dramatically as incomes increase. Elimination of the FSP, and replacing the transfer with cash, could therefore have impacts on diets of the poor and on farm income, impacts which would not be reflected in the aggregate food expenditure data.

The third summary statement is that, regardless of what happens to the Food Stamp Program, neither the funding levels nor the operating rules specific to USDA's other feeding programs are affected by the welfare reform proposal. While the FSP is by far the most costly of the current food programs, the cash value of the transfer represents only about 15 percent of all programs which influence food purchases by the poor. It might be argued that, if nutritionally adequate diets for targeted groups (pregnant women, infants, and children, for example) is the policy goal, feeding programs designed for these target groups may be more effective than food stamps.

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THE EQUITABLE DISTRIBUTION OF DOMESTIC FOOD AID

By C. Peter Timmer*

ABSTRACT

The tools of economic analysis are mostly suited to dealing with questions of efficiency, but economists also have input for equity-efficiency tradeoffs. Understanding the linkage among three variables—agriculture, food, and nutrition—is fundamental to putting the analytical setting for policy analysis in perspective. Any one of the three variables can serve as a planning base as long as it is understood where price fits in the broader scheme. U.S. policy is moving incrementally toward a focus on food.

KEYWORDS: U.S. food policy, policy analysis, policy orientation, agriculture, nutrition.

INTRODUCTION

Understanding the equitable distribution of food aid in the domestic context requires a program by program discussion of access to benefits and utilization relative to needs of participants. Asking how equitable rules can be efficiently designed and implemented is also the “real-politik” approach, for it recognizes the entrenched nature of most domestic food aid programs. As critics concede the need for such programs and enthusiasts recognize the need for spending limits and enforcement against fraud, the only ground left for discussion is the task of guaranteeing that the programs are equitable within their general mandate.

Such a perspective will not identify the major research issues in food policy analysis. The narrow issue of equity should be addressed only as a component of a broader understanding of U.S. food policy. A broader discussion makes it possible to view the equitable distribution of food aid in a different light, a light that illuminates a set of research questions and priorities that would not have been obvious from the direct approach. The broader perspective also draws directly from Ken Farrell’s mandate to the profession in 1976:

The complexities and interdependencies of our society require of agricultural economists a more holistic, integral view of agricultural and public policies than is evident in our current agenda. We should broaden

our professional perspectives, cultivate new clientele and professional alliances, recast and reorder our agenda, and experiment with modified and new institutional arrangements. In so doing we could better address emerging public policy issues and better serve the public interest concerning food and agriculture (2, p. 785).¹



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¹Italicized numbers in parentheses refer to items in References at the end of this article.

The broader food policy perspective will also reveal the impossibility of dealing adequately with equity in a narrow context. Lester Thurow presented four different specifications of economic equity and found them all lacking any measurable precision (8, p. 50). The problem is no less difficult in the context of equitable distribution of food aid. Defining the food equity issues is the major task of this article.

Even with the general objective settled, the direction of attack needs to be determined. Two fundamentally different approaches are possible and each represents a substantial wing of the economics profession. In the micro approach, characteristic of the best of agricultural economic policy analysis, we would look carefully at each of the food aid programs, determine the "fairness" or "equity" of the legislative and administrative rules for each, and building from the program level up, would attempt some larger scale assessment of the full array.

In the second approach, characteristic of the best of macroeconomic policy analysis, we would look at the entire U.S. economy and ask how, in Thurow's terminology, it generates inequality. Income distribution and price determination mechanisms are the starting points and they are endogenous in this analysis. If manipulations of variables in these mechanisms do not provide a satisfactory distribution of material well-being, a sequence of more targeted programs can be brought to bear on the problem. In Rod Leonard's words:

There are nearly 32 million Americans for whom the lack of an adequate income gets translated into an inadequate diet, which inevitably leads to poor nutrition, poorer health, and all the related problems. They are citizens who live in communities that have begun to employ various federal programs to enable the community to better serve its residents. The food stamp program is one of those programs. It is a community service (4, p. 1006).

The difficulty with the micro approach is that it takes as given many of the variables which policymakers can and do change with intended and unintended equity effects. James Storey, senior counsel for the Senate Budget Committee, has written that:

... income transfer programs are an assortment of fragmented efforts that distribute income to a variety of persons for a variety of purposes, on conflicting terms, and with unforeseen effects. Two primary factors have inhibited a uniform system of equitable aid: a tradition of local responsibility for the needy and a habit of approaching social problems in isolation, developing new programs to attack newly perceived problems.

Our income transfer programs are shaped by at least nineteen committees of congress,

fifty state legislatures, six cabinet departments, three other federal agencies, fifty-four state-level welfare agencies and more than 1,500 county welfare departments, the U.S. Supreme Court and many lesser courts.

Each congressional committee typically deals only with its own subject areas, although changes in one benefit program, such as AFDC or social security, commonly affect another, such as food stamps or veterans' pensions. Because of the categorical nature of the 'system' and the restricted viewpoints of agencies and congressional committees, attempts to remedy one problem may create another. . .

None of the committees has the duty to appraise the total effect of congressional decisions. In considering income transfer policy alternatives, it is not the effect of each separate program but of the whole system as it applies to each eligible family or individual that is important to evaluate (7, pp. 1014-5).

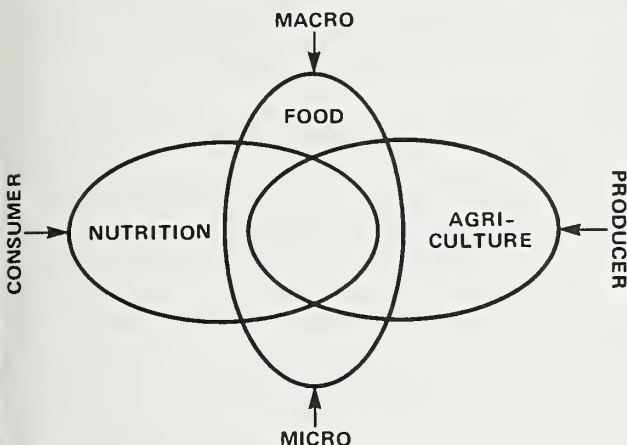
Macroeconomic policy analysis provides this perspective on the whole system in principle, but very little of such analysis actually gets to the level of the eligible family or person. Moreover, the complexity of the U.S. economy creates serious problems when macroanalysts want to make fairly simple disaggregation into sectors such as agriculture, transportation, steel, or energy. A substantive understanding of the major equity issues in the U.S. food system from a macro starting point is not now possible.

Starting from a macro policy framework, I will work toward the micro equity issues as a means of identifying major research topics. Whether the micro and macro issues will ever link together is problematical, but such a linkage will be a major topic on the research agenda.

AN ANALYTICAL SETTING FOR FOOD POLICY ANALYSIS

The linkages and relationships that make food policy analysis so complex can be shown schematically with a fairly conventional Venn diagram (fig. 1). The three major topic areas are agriculture (assumed to include farming as a subset), food, and nutrition. Each is represented in figure 1 by an elliptical set. The food set forms the center of the schematic. Nutrition intersects it from the left, and agriculture, from the right. Nutrition and agriculture also intersect each other to a significant degree. Two different axes are superimposed on the intersecting sets. The horizontal axis runs from producers on the right to consumers on the left, paralleling the flow of physical commodities. The vertical axis runs from macro issues on the top to micro issues on the bottom, paralleling the chain of impact of policies and programs on decisionmaking units in the economy.

FIGURE 1
INTERRELATIONSHIPS IN THE U.S. FOOD SYSTEM



The advantage of such a simple diagram is that it reminds us of linkages and interrelationships but also of whatever scope exists for independent action in any sphere. For example, agriculture is linked to food by a processing sector, by onfarm conjunction, and by markets and prices. But a series of nonfood issues are linked to agriculture from outside the intersecting sets: resource use; development, use, and impact of technology; farm income and rural welfare; and a range of environmental concerns. Naturally all these factors impinge on food, and ultimately on nutrition, but the chain of causation for these runs primarily from right to left and not in a circle.

Similarly, nutrition is linked to food by consumer incomes through the same market and price mechanisms that link agriculture to the food sector. Direct feeding programs can provide an immediate link between the food sector and nutrition. But nutrition is also substantially influenced by a range of factors outside the intersecting agriculture, food, and nutrition sets: health status; family environment, especially status of water and sanitation; and perhaps most importantly, household decisionmakers' knowledge about what is needed for good nutrition and how to achieve it efficiently within a given economic context.

The food sector also has its independent forces despite being centrally placed between agriculture and nutrition. Processing and merchandising considerations have a major role in the food sector. One significant external factor to the food sector is advertising. Certainly some small amount of advertising is done in the agriculture and nutrition sectors, but the \$100,000 annual advertising budget of the Nutrition Foundation is dwarfed by the \$4 billion spent by the food industry advertising. The industry considers this expenditure as subject to the control of private decisions within the industry. However, such advertising obviously affects nutritional status and, through the emphasis on processed foods and hence on farmers' share of the consumer's food dollar, affects agriculture.

TYPES OF PLANNING FOR FOOD POLICY

How should planning in these three interrelated sectors be conducted? There are only three choices. First, the primary focus could be on agriculture with the impact on food and nutrition left to be determined primarily by the private market. In terms of the axes superimposed on the Venn diagram, this strategy would be producer oriented wherein the macroeconomic mechanisms determining wages, interest rates, incomes, and the level of economic activity would combine with the microeconomic mechanisms determining commodity prices and individual consumer's decisions to produce a laissez-faire nutritional outcome. Specific, ad hoc, nutrition interventions might be designed in conjunction with this agriculture-to-food-to-nutrition planning sequence. These might be used if the actual nutritional outcome is unsatisfactory because the agricultural policy itself creates problems or because outcomes in either the macroeconomic environment or specific microenvironment are unsatisfactory.

This first type of planning is the way it is done now, but it does not make much sense in a logical world. It is virtually impossible to specify a set of objectives for agricultural policy in and of itself. Agriculture faces a derived demand for its output and it has a subset of unique policy issues—welfare of farm families, resource use, impact of technology, and the like—that can be dealt with better apart from the overriding national concerns for the level and composition of agricultural output.

A second major planning focus could be on nutrition, allowing the market to work "upstream" through the food and agricultural sectors. Defining a nutritional policy in this sense is at least logical because ensuring adequate nutritional status for all citizens is a viable, measurable welfare goal for a society. All the various interests and constraints in food and agricultural policy would be resolved in the context of meeting nutritional requirements. The obvious difficulty with this approach is that nutrition has very little market impact. Farmers do not produce nutrients, processors do not process nutrients, and consumers do not buy nutrients, except indirectly. Food is typically the major vehicle for nutrients in the United States and elsewhere. Policymaking from a nutrition perspective would require the Government to make most of the decisions or at least to intervene heavily and continuously in the market.

The nutrition policy perspective is simply not feasible in most countries, including the United States, for three reasons: (1) There is no administrative and bureaucratic capability to take over the function of markets; (2) enough serious gaps exist about nutritional requirements and the functional significance of marginal malnutrition that nutrition cannot serve as the primary allocator of resources; and (3) nutrition's political constituency is much too small for this approach to be implemented.

The only alternative is to plan from a food sector perspective. In this approach, food would be the primary intermediary between agriculture and nutrition. Planning from this perspective has the advantage of a central focus on individual markets, which remain the most efficient mechanisms available for distributing commodities. A food policy

also should be far enough removed from agriculture so as not to be dominated by producer interests. At the same time, nutrition would not be the only element in either a private or social welfare function. If the food policy analysis can contain sensitivities to both nutritional and farmers' needs, this central perspective can provide the best mechanism for balancing the diverse interests of consumers and producers.

A food policy perspective draws on a much stonger and broader clientele than a nutrition policy perspective, one that now rivals the clout of the farm bloc. Ken Farrell noted almost 2 years ago:

Some observers of the policy scene suggest that not agricultural policy but food policy will be enacted henceforth. They use the term food policy to convey the need for a comprehensive, integrated set of national policies centered on food. Incorporated would be traditional agricultural price and income policy with elements of other national policies—foreign trade and aid, nutrition, environmental protection, and overall national economic policies, for example. Although it might be questioned where the boundaries of a comprehensive food policy could be logically and usefully drawn, we appear in some respects to be moving toward such a policy in an incremental, ad hoc, unplanned, even unconscious way (2, p. 788).

The advantage of a *food* policy is not that it can ignore agricultural and nutritional issues but that the central perspective permits a more balanced and coordinated treatment of both, a treatment that incorporates the many back-and-forth linkages implicit in figure 1. A food policy must still involve the three fundamental dimensions of this problem area, and three integrated but separable policy elements will be required. Not surprisingly, more thought has been given to the nature of these elements in an international development context than in the U.S. domestic context. Yet it is surprising how relevant one of the major statements is to our own situation.

The 9th Report of the Joint Food and Agriculture/World Health Organization Expert Committee on Nutrition outlines three elements basic to any food strategy:

1. The strategy for rural development should foster widespread improvements in production and output and be designed to improve the pattern of income distribution while, at the same time, achieving the required expansion of food production.

2. Measures should be adopted to influence the combinations of food produced, the processing techniques employed and the distribution of these foods, to improve the quality of the diet available to all income groups.

3. A complex of measures—nutrition-related health activities and nutrition intervention programs—is needed to

have a more direct impact on the nutritional status and health of particular segments of the population (1).

Such a food policy perspective provides the proper orientation for asking equity questions in the context of analysis and planning. I now attempt to identify the major equity issues in the U.S. food system and to consider them in this analytical and planning framework.

THE EQUITY ISSUES IN THE U.S. FOOD SYSTEM

The previous discussion of policy perspective was framed primarily along the horizontal axis of figure 1, the continuum from producers to consumers. The equity issues in the U.S. food system can best be discussed along the vertical axis from macro to micro. The logic of this draws from the heavy impact that earned income and employment have on equitable access to food, variables primarily determined by macroeconomic forces. As food programs account for only 5 percent of all Federal transfer payments, (7, p. 1,011), the macro-tail is clearly wagging the food equity dog.

Five major levels of equity issues can be identified. In the following presentation, the issues are ordered from macro to micro, and each is cast as a dichotomy between two possible policy analysis perspectives. The five issue levels are these:

- Domestic versus international
- Policy versus program
- Equality versus minimum maintenance
- Legal entitlement versus participant utilization
- Consumer sovereignty versus mandated consumption levels

DOMESTIC VERSUS INTERNATIONAL

U.S. agriculture has long depended on international markets for a very substantial proportion of its total sales and farm income. The U.S. economy, especially in the seventies, has become heavily dependent on the foreign exchange earned by sales of farm products to pay for a rising bill for imported oil. In return, a number of wealthy international customers, primarily Western Europe and Japan, have become heavily dependent on access to U.S. farm products to defend a living standard and increasingly meat-intensive diet made possible through trade. And a few poorer countries have become dependent on the United States for food aid or access to cash markets for U.S. food surpluses. One major equity issue, then, is who will get access to U.S. farm products in time of shortage? Raw purchasing power almost guarantees inequities in access to cash markets. Although raw poverty is a useful first-order guide to equitable distribution of food aid by country, it is certainly no guarantee that such food aid will help fight malnutrition (9).

The domestic dichotomy is the interesting issue for this food policy seminar. In today's world community, a handful of countries now have higher average per capita

incomes than the United States, partly because of an overvalued dollar, and many countries have a substantial elite with high incomes and consumption tastes to accompany their purchasing power. Many poorer Americans have found themselves unable to compete on a price basis for their basic foodstuffs. The plight of a Puerto Rican mother of four, living in New York City and trying to feed her family beans and rice in 1973 and 1974, stems directly from the international linkages into our domestic food system. Beans and rice form a tiny proportion of the domestic food index and an even tinier proportion of the overall cost of living index. But beans and rice form a much larger proportion of the consumption bundle of the poor, especially of several minority groups. Without a policy perspective directly concerned for the equity issues created by those linkages, much hardship not only can be created by internationally induced price increases but it can go largely unnoticed by analysts with narrower concerns.

POLICY VERSUS PROGRAM

A very sharp distinction exists in the United States between food and nutrition policy analysis and food and nutrition program analysis. Little of either is done, to be sure, but what exists focuses almost entirely on the narrow, program perspective. The recent book by Harold Halcrow is a particularly representative example (3). Ten of eleven chapters focus primarily on agricultural and farm policy in which the major concern is maintaining equitable farm incomes while producing sufficient quantities of food and fiber to meet domestic and international needs. Naturally, the core of the discussion revolves around farm prices as the vehicle for ensuring farm income levels.

The history of agricultural policy as a conscious attempt by the Government to ensure equitable farm incomes is a history of various strategies for raising farm prices above free market levels. Such an orientation has obvious roots in the declining terms of trade for farm products from the twenties to the disastrous thirties. As consumers do not change their demand response to higher food prices, it is easy to show the redistribution of income from food consumers to food producers when food prices rise relative to other prices. (It is also easy to show such redistribution when food prices decline). Perhaps the most vivid example is the large jump in farm income between 1972 and 1974 as the nonfarm economy went into a major recession.

The equity of such a policy approach derives ostensibly from the lower per capita incomes of farmers relative to those of food consumers in general. Thus, a transfer of income from consumers to producers results in a more even, hence more equitable, distribution of income. The obvious flaw in the argument is its failure to account separately for the distribution of income within the two sectors. Higher food prices have a disproportionate impact on low-income consumers, who spend a relatively

larger proportion of that income on food (and who are forced by real-income effects to respond more sensitively to food price changes). Similarly, higher farm gate prices are translated with considerable leverage into higher incomes for larger farmers with incomes approaching or exceeding the U.S. average. The equity argument for higher food prices needs careful disaggregation before being accepted casually.

The point is that the equity issues of food and nutrition policy for consumers are not considered at this level in the first place. Halcrow in his book relegates a concern for nutrition policy to consideration of the portfolio of food and nutrition *programs* designed explicitly to improve the poor's access to food or to educate the poor to buy better foods with their income. There is no question these are important programs with important equity issues. But to deal with food policy for producers at the level of national policy and with food policy for consumers at the level of palliative, corrective programs introduces a serious bias in the analytical perspective needed to understand and formulate national agricultural, food, and nutrition policy.

The linkages from macroagricultural policy to individual nutritional status are real. Ann Roserberger has analyzed the impact of milk pricing policy on the intake of calcium by income group in the United States. Using the 1965 USDA Household Food Consumption Survey, which showed a high correlation between low incomes and intake of calcium below recommended levels, she estimated separate *price* elasticities of demand for milk for each income level. Despite an overall inelastic demand for the population as a whole, the lowest income groups had very high price elasticities, approaching -2.0. Coupled with Justice Department estimates of the price effects of milk policy, calculations showed increases in calcium intake of 25 percent for the low milk-intake income groups under free market prices (6). The issue is not milk prices but the policy perspective that permits manipulation of prices on producers' behalf and relegates consumer interests to the program level. The obvious unequal perspective in terms of historical evolution and political realities should not hide the fact that it produces bad policy analysis.

EQUALITY VERSUS MINIMUM AID LEVEL

The fundamental issue for all food aid programs is whether participants participate equally with nonparticipants in some dimension or whether a certain minimum floor is guaranteed, below which no one's aid level should be permitted to fall. In Rod Leonard's colorful language, much of the debate over the food stamp program looks like "a crowd of Lady Bountifuls, arguing that the Thanksgiving package is much too good for the poor folks" (4, p. 1,006).

Clearly much of the controversy over the actual implementation of U.S. food aid programs lies in administrative efforts to ensure that participants do not become too well off, efforts which clash with participants' needs

for dignity and preservation of self-esteem. The programs, then, are subject to very real pressures from both the "too much" lobby and the "too little" lobby. The source of the criticism derives from fundamentally different viewpoints on why participants need the program. The "too much" lobbyists feel that participants are free loaders on the American economy and they want to minimize disincentives to get jobs. The "too little" lobbyists view participants as the American economy's unfortunate victims who have been shortchanged by a society that now owes them fuller compensation.

The dichotomy is not new nor solely a function of the food sector. Kermit Gordon noted years ago:

Contemporary American society is, in a sense, a split level structure. Its political and social institutions provide universally distributed rights and privileges that proclaim equality of all citizens. But its economic institutions rely on market-determined incomes that generate substantial disparities among citizens in living standards and material welfare . . . The resulting mixture of equal rights and unequal incomes creates tensions between the political principles of democracy and the economic principles of capitalism (5, p. vii).

The political tension between equality and minimum guarantee will continue to be resolved in favor of the minimum guarantee for some time to come. But again, a narrow focus on defining this minimum and finding efficient mechanisms to guarantee it places unnecessary constraints on a comprehensive food policy analysis.

ENTITLEMENT VERSUS UTILIZATION

Early food programs contained fairly precise definitions of what participants in various income/household groups were entitled to. Utilization of that entitlement was left to be worked out jointly between local administrative procedure and participant initiative. Two problems became obvious quickly. First, local administrative procedures in many areas were not designed in good faith to foster maximum participation by the entitled population. Second, a complex set of social, cultural, economic, and health characteristics of entitled households frequently prevented their use of program benefits even with good faith in program design and administration. The so-called hunger lobby consistently has found it necessary to bring court action to achieve mandated outreach efforts designed to advertise benefits to raise a surprisingly low participation/entitlement ratio for most U.S. food aid programs.

In a social system as complicated and diverse as that of the United States, equity is not met by legal access. If it were, Kermit Gordon's capitalism democracy tensions would have been resolved long ago. But outreach programs as a means to achieve equitable utilization of food aid

benefits force food policy analysis down a very slippery path. At the end is the most micro equity question with perhaps the broadest philosophical overtones.

CONSUMER SOVEREIGNTY VERSUS MANDATED CONSUMPTION

The American economic system of mixed capitalism relies very heavily on consumer sovereignty to decide what is sold and, within the income distribution, to whom. Anybody who analyzes household level consumption data comes away impressed by the enormous diversity of consumption bundles even within a given income class. The principle that consumers should be free to choose how to spend their own (after tax) income is fundamental to our economic system. Consumer sovereignty is thought by many to be the basis of political democracy as well. The premise that consumer preferences are in fact determined by corporate advertising, or that important commodities such as gasoline or meat should be rationed, has immediate economic and political implications.

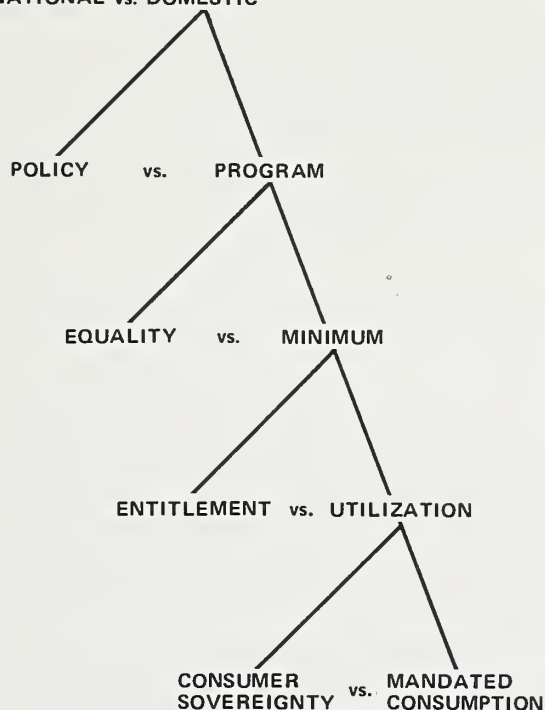
An obvious dilemma is posed when public assistance programs attempt to mandate consumption patterns through program-provided benefits. Food Stamps, the School Lunch Program, and the WIC (Women, Infants, Children) feeding program are obvious examples of attempts by society to change the poor's spending patterns by legal mandate. This method is the logical end point of a concern for utilization of benefits relative to entitlement. Providing knowledge *about* a program does not guarantee participation *in* the program. Guaranteeing such participation requires a legal mandate that will force participation. Any outreach plan with legally mandated rates of participation required to demonstrate execution in good faith must face this dilemma.

The dilemma internal to each program is the extent of mandated consumption from program income. Is it equitable to force poor people to buy more food than they want? The standard response is to argue that nutrition education is needed to show the poor how important the extra food is for nutritional well-being, but without a successful educational program mandated food consumption is necessary. Yet the equity question will not go away because there is also widespread agreement that the more affluent consumers in the United States need nutrition education to divert them from a diet high in fat, cholesterol, sugar, and calories, one that is probably significantly damaging their health. In the absence of voluntary change from such unhealthy diets, should not food consumption patterns for these more affluent Americans be mandated?

Maintaining an open food policy perspective for analysis in the face of so many dichotomous issues will be no easy task, but it is important not to start with a partial agenda. There is no harm in starting on a piece of it. The important thing is to understand where that piece fits in the broader scheme of things. Figure 2 attempts to summarize the five levels of issues just presented and to show how the pieces fit together.

FIGURE 2
LEVELS OF EQUITY ISSUES IN THE U.S. FOOD
SYSTEM

INTERNATIONAL vs. DOMESTIC



A RESEARCH AGENDA

A new USDA food policy research unit should have the advantage of a clean slate. If its scope has already been narrowly defined, the unit should understand that what it takes as given may in fact be a variable in other policy analysis. It is important that mechanisms exist so that analysis at all five levels can be funded, carried out, criticized, and ultimately integrated into a more comprehensive understanding of the U.S. agricultural, food, and nutrition system. In this spirit, the five issue levels suggest research questions that can be broadly put as follows:

- What are the linkages between the world food economy and the U.S. domestic food economy? Does the direction of causation along these linkages reverse in times of surplus and scarcity? What are the income distribution, food consumption, and nutritional implications of the linkages in both environments?
- What is the impact of U.S. agricultural price policy on income distribution, food consumption, and the nutritional status of the poor? Are supplementary food aid programs effective and efficient ways to handle the nutritional problems that emerge? Would supplementary programs aimed at farm in-

come directly in the context of significantly lower farm gate prices be more effective?

- Can minimum standards for food programs be defined that reconcile the major philosophical differences between participants' need for dignity and taxpayers' concerns for program costs?
- What are the social, cultural, economic, and health factors that prevent participants' use of existing programs? What administrative procedures need to be redesigned to foster access? What kinds of outreach programs are effective in bringing needy citizens into the programs without costing more money than the benefits themselves are worth?
- How do the poor spend their money? What causes purchase of inadequate diets? How do their expenditure patterns change when prices and incomes change? Does the source of income make a difference? How expensive is it to enforce mandated consumption patterns? Is there any nutritional impact either way?

Fortunately it is my task to ask questions rather than to provide answers. A broad food policy perspective is new to both Washington and academia, and the breadth of the agenda reflects this. The policymaking process goes on whether we provide answers or not. What brings us together and, I hope, will send us off, is a shared determination that the answers from good policy research will make for better policy.

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PROBLEMS WITH THE BENCHMARKS: POVERTY AND THE THRIFTY FOOD PLAN

By Thomas A. Stucker, Mike Belongia and Robert Rizek*

ABSTRACT

Benchmarks are often used in domestic food programs as guidelines for determining the existence and degree of need. The equity achieved in program operation can thus be affected by the benchmark criteria. The two primary factors in determining food aid program benefits are the quantity and kind of food needed, and the economic ability to obtain and consume this food. The Thrifty Food Plan and the "poverty level" are now used as the guidelines for these factors. Other methods which are technically more precise might be found, but these seem appropriate given the many forces which affect program results.

KEYWORDS: Benchmarks, program equity, poverty level, Thrifty Food Plan, Food Stamp Program.

INTRODUCTION

Judgments relating to the effectiveness and equity of Government programs are often made on the basis of "benchmarks." These reference points serve as guides in the design and evaluation of programs. The measures adopted as the benchmarks for equitable distribution of food aid in the United States *can* be improved. We all know this; and it does not reflect negatively on the work done up to this time to state it. Our welfare programs are continually being changed and adjusted to better meet policy goals. These may be existing goals or new goals. But the fact that goals do change (at least in relative importance) implies that program changes are often also desirable. The question is whether the costs of adopting such changes will outweigh the benefits.

Program shortcomings are often widely recognized and exposed to the public as areas in which change is needed. The problem, of course, is in specifying *workable* improvements. The largest program for distributing food aid—the \$5 billion per year Food Stamp Program serving 15-20 million participants annually — may be used as an example. In this program, benefits are based on "objective" criteria, such as household size and income status. But these "objective" criteria are defined rather subjectively

over time as the program evolves to meet new or changing policy goals.

Consider the wealth constraint included in the new Food Stamp Act. This constraint is applied objectively to all participants, but the level at which it was set is a somewhat subjective decision of the Congress. If, for example, policy goals change, program participants may be allowed to hold more (or less) property in the future.

The criteria levels used as benchmarks for equity in Government food aid programs are based on the relationship of household purchase needs to household purchasing power. Two types of "equity" then might be defined. The first aspect is the vertical shift of program participants' food purchasing power. Program benefits increase the recipients' capability to obtain food up to levels achieved by nonparticipants with higher income. This gain, in turn, increases the societal equity in food distribution and consumption.

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The second aspect of equity relates to "horizontal equity"—the equal treatment of equals. This aspect is important in ensuring that program benefits are distributed equitably; that is, that equal benefits are made available to those equally needy. An important related point, and one that contributes greatly to the legislative complexity, is the development of program rules which make equitable adjustments in benefits for valid differences in recipients' circumstances. An example here might be adjustments for higher food costs because of geographic location.

The purpose of this article is to cast a critical eye at the benchmarks used for determining program benefits. This report is not the result of research testing. Instead, we review the benchmarks now in use and their qualities—both good and bad. Some new and some old questions about their ability to generate socially acceptable levels of program equity will be raised.

THE BENCHMARKS

A number of criteria and related benchmarks exist for determining food aid program benefits. As stated previously, the two overriding factors are: (1) the quantity and kind of food needed, and (2) the economic ability to obtain and consume this food. These two theoretical concepts are ultimately distilled down to two measurable factors: (1) the cost of food to meet nutritional needs for the household members, and (2) the household's income.

The aim of current food aid programs is to adjust benefits so that the amount of aid grows as household ability to meet food needs declines. The two benchmarks used in the determination of the food stamp allotment are the Thrifty Food Plan and the poverty level.

THE THRIFTY FOOD PLAN

The Thrifty Food Plan is the current basis for the food stamp allotment. It is the least costly of four family food plans developed by the Agricultural Research Service (ARS) in 1974-75 (3).¹ As with the more costly plans, the Thrifty Plan specifies the amounts of foods, in terms of 15 food groups, the family members might be expected to use. Amounts of food are suggested separately for men, women, and children of different ages—14 sex-age categories—to meet the Recommended Dietary Allowances (RDA's) established by the National Academy of Sciences.

A constrained optimization model was used to specify the food item menus that are most like average food consumption of persons in households with relatively low food costs² and that meet the RDA's at a given cost.³ In this

model, conformity to existing food consumption patterns is treated as a measure of palatability of diet.

The cost of food in the plan for each of the 14 sex-age categories is estimated monthly. Cost estimates for the sex-age categories, with economy of scale factors, can be used to estimate cost of the food plan for a family of any size and sex-age composition.

The Economy Food Plan, which preceded the Thrifty Plan, was used as the basis for the food stamp allotment when the program was begun in the sixties and until the Thrifty Food Plan was adopted for use in January 1976. In 1975, a Federal Court decision (*Rodway versus USDA*) ruled that allotments under the Economy Food Plan were not sufficient to maintain adequate diets and that the allotment ignored easily measured differences in household characteristics, such as the sex and age of the household members. It is significant to note here that the courts are a very important policymaking body and they often have a significant effect on policies which are implemented.

In responding to the court decision (6, 7), USDA officials used the Thrifty Food Plan—the new food plan developed to meet the 1974 Recommended Dietary Allowance and replace the Economy Food Plan—as the basis for three alternate proposals for setting the food stamp allotment. In two of them, individual allotments would be used to represent the cost of the food according to the sex and age of household members. These two proposals were overwhelmingly rejected by policymakers primarily on claims that they reduced benefits for aged persons and households with small children. They were administratively complex, expensive, and error-prone. Thus, potentially more equity with respect to meeting food needs was rejected in favor of other goals. The use of uniform allotments for households of the same size was continued.

A food plan making allotments specific to household composition is available, but it is not being used. The allotment is based on the cost of the Thrifty Food Plan for a specific four-person household. Adjustments are made for household size, and economies of scale in buying and using food are considered.

Approaches to estimating a household's food needs, other than using the *total cost* of the food plan for family members, might be considered. The use of adult equivalent scales has long been suggested in the literature as a method of more closely estimating a household's food needs (1). Salathe and Buse, for example, have developed an alternate theoretical approach for estimating adult equivalent scales for foods (4). Household consumption needs are estimated based on a standard consuming unit, often an adult male. Other household members are expressed in some fractional equivalent of this adult. Use of

¹ ARS is now part of the Science and Education Administration. Italicized numbers in parentheses refer to items in References at the end of this article.

² The households selected as a basis for consumption patterns for the Thrifty Plan used food valued at or slightly above the cost of the Economy Food Plan. Their median income was \$5,190 in 1964.

³ Costs are for total food needs, assuming that all food is prepared at home. They allow for some coffee, tea, and other food accessories; but not for tobacco or any non-food items purchased at the grocery store. They allow for a minimum of food waste in the home.

such scales for individualizing household allotments would likely result in relatively lower benefits for elderly persons and households with young children and, therefore, meet with resistance similar to that in 1975.

While no one can assess exactly how well an allotment based on the Thrifty Food Plan has met its stated goals, theory and application both indicate that the use of national averages in determining which foods comprise the sample menu does *not* account explicitly for differences in tastes and preferences. This has important implications. Differences in eating habits of people with various ethnic and cultural backgrounds make it virtually impossible to tailor program benefits to particular groups. In fact, doing so would contradict the goal of horizontal equity in one sense. People with equal economic status would no longer be treated equally because of a *perceived* difference in need. The current system based on national averages is perhaps the only “fair” method here.

What about interregional differences in the costs of food? As previously, noted, the current program does not account for such differences in the contiguous States. The Bureau of Labor Statistics, U.S. Department of Commerce, publishes food price data for 23 major metropolitan areas on a monthly basis. Similar data could provide a basis for further fine-tuning of benefits distribution according to the regional cost of the Thrifty Food Plan. But would such a scheme be a *practical* improvement? The price data show considerable interregional variation for *selected* food items. But due to the regional characteristics of food production, the differences are not consistent over all foods; that is, they are partially offsetting. A market basket approach might capture interregional differences, but obviously the weighting scheme used would be crucial. Presumably it would require knowledge and use of regional market baskets. Thus, benefits *could* be distributed more equitably among regions.⁴ However, even regional differences in deductions and benefits would not eliminate the intraregional (rural versus urban) differences. The answer lies in assessing the benefits versus the costs of such a change.

The questions raised regarding the cost benchmark—the Thrifty Food Plan—have been shown to be approachable in the technical sense. In most cases the program rules could be made more precise—to more nearly match individual household needs—but that would not necessarily be the optimum strategy. The decisionmakers would need more cost and benefit estimates for consideration of such changes.

⁴ Some states have taken it upon themselves to supplement welfare benefits, but the lowest benefit levels still tend to be in those States with the greatest concentration of poverty (according to the *national* average poverty line).

PURCHASING POWER

Income is, of course, the accepted measure of purchasing power. Although linking benefits to income causes problems with factors such as the creation of work disincentives, it is the best knowledge we have of household resource availability. Aid programs, however, must be keyed to some threshold income level below which aid will be supplied. This level has its origin in a determination from the Department of Agriculture's 1955 survey of food consumption. In that survey, families of three or more persons spent approximately one-third of their income on food. The “poverty level” for such families was set at three times the cost of the Economy Food Plan; in other words, the level which would allow households to spend one-third of their income for a low-cost diet. “For smaller families and persons living alone, the cost of the Economy Food Plan was multiplied by factors that were slightly higher in order to compensate for the relatively larger fixed expenses of the smaller households” (6). The poverty thresholds are updated annually to adjust for cost-of-living changes as measured by the Consumer Price Index (7). Of course, since the CPI is based on a market basket approach for a specific group (city wage earners and clerical workers), it likely does not represent real changes in the cost of living for most persons. The poverty income line was drawn at \$5,815 in 1976 for a nonfarm family of four. For the period ending April 1978, the income poverty level for a family of four is \$5,850 per year.

As noted, to specify this threshold income in an equitable manner for all households, several things must be known. These include such factors as the number of persons dependent on this income and justifiable deductions from income. Such deductions are intended to adjust to a *net income* considered minimal for eligibility.

Examples which illustrate such “fine-tuning” may be found in the new Food Stamp Program. Eligibility for that program is based on the nonfarm Federal Poverty Guidelines set by the Office of Management and Budget. In calculating net income for food stamp purposes, a certain amount of the household's income is simply not counted (excluded), and then certain allowable household expenses are deducted.

A standard deduction of \$60 per month will be allowed for each household. (This may be adjusted in certain areas: Alaska, Hawaii, Guam, Puerto Rico, and the Virgin Islands of the United States.) The standard deduction is adjusted semiannually to reflect changes in the CPI for items other than food. Households with earned income are allowed an additional deduction of 20 percent of all earned income. Also a maximum deduction of actual dependent care and excess shelter costs is allowed.

The standard deduction of \$60 per household seems as though it would not affect the equity status among those in the program. But, in fact, it does, because itemized deductions were previously used. Also, it can be

adjusted in certain regions. However, the real impact of the standard deduction is that benefits are adjusted for program participants, over time, so as to maintain their purchasing power for items *other than food*. This helps prevent a shift from expenditures for food as the cost of nonfood items increases.

The earned income deduction allows households an additional deduction equal to 20 percent of their earned income. This deduction is compensation for work-related expenses such as taxes, other mandatory deductions from salary, and costs which would not be incurred if the person were unemployed. Use of a constant percentage deduction implies greater absolute deductions for those with higher incomes. Also, a constant 20 percent figure by no means relates to *actual* work-related expenses.

In contrast, the dependent care deduction and excess shelter expense deduction are based on actual costs up to certain limits. Certainly, some work-related costs are difficult to estimate. Travel to and from the place of employment in an owned car is an example. But some closer estimate than a constant percentage for all households with income is *possible*, if not necessarily feasible.

The wealth constraint was developed largely because of public criticisms of participants who allocated their cash to nonfood items while accepting food aid. This is an equity issue, but it is also a moral issue as to what constraints, if any, should accompany the provision and use of public assistance.

CONCLUSIONS

In general, methods which are technically more precise could be used for establishing program eligibility and benefit levels, although the tools and methods now used seem relatively precise considering the many forces affecting program results. Whether such refinements would significantly improve program operation and results is not known. To establish whether such possibilities exist, the Congress included in the 1977 Food and Agriculture Act provisions for research to help improve the administration and effectiveness of the Food Stamp Program.

Potential improvements in the benchmarks may be at hand. The 1977-78 Nationwide Food Consumption Survey will provide new information on the impact of the Food Stamp Program on food consumption, food expenditures, and nutritional quality of diets. For example, these data will help us learn how many food stamp households achieve diets that meet various nutritional criteria compared with households that are eligible but do not participate in the program and households that are at higher economic levels. USDA's Human Nutrition Center will revise the Thrifty Food Plan using food consumption

and food price data from the 1977-78 survey and nutritional goals based on the 1979 edition of the Recommended Dietary Allowances and recommendations of the National Academy of Sciences with respect to certain dietary substances not covered by the RDA's. Presumably, the food stamp allotment will be adjusted to reflect any changes in the cost of the revised food plan.

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FOOD PURCHASING AS AN INDICATOR OF WELFARE STATUS

By Larry Salathe and Rueben Buse*

ABSTRACT

Equivalent income thresholds were estimated for households varying by size and composition and geographical location. These thresholds provide levels of income alternative households would require to obtain the same level of general welfare. In this study, households spending equal fractions of their income on food were assumed to be on the average equally well off. The estimated equivalent income thresholds are based upon observed household food expenditure behavior. These equivalent income thresholds provide benchmarks by which welfare benefits may be distributed equitably between eligible households.

KEYWORDS: Equity, food expenditures, household income, household size and composition, welfare benefits.

The U.S. Department of Health, Education and Welfare estimates that a household of 4 would need an income of \$5,850 to reach the so-called poverty threshold in 1977. All too often, households with income below this poverty threshold are considered poor, while households with income above this threshold are not considered poor. However, it seems obvious that a household of 4 living on \$5,850 in Harlem is poorer than a household of 2 living on the same money income in rural Mississippi. Thus, if we hope to distribute equitably welfare program benefits among the poor, we must first determine levels of income which typify equivalent levels of poverty for households in different circumstances. However, before these levels of income can be derived, a measure of general welfare is required that can be used to compare the economic well-being of different households.

Extensive analyses of household consumption and expenditures dating back over more than a century have provided a variety of measures for general welfare. These include the adequacy of diets, the proportion of income spent on various categories of goods, and the proportion of income saved.

The proportion of income spent on food has been used extensively by economists as a measure of the general welfare of households. For example, the U.S. Department of Labor's Statistics (BLS), and Orshansky, Watts, and Wetzler all used the proportion of income spent on

food as the basis for deriving equivalent income thresholds for different households (9, 4, 7, 8).¹ The basic assumption implied is that households who spend equal fractions of their income on food are, on the average, equally well off. Given that the proportion of household income spent on food adequately measures the general welfare of households, we then must determine the impact of household characteristics on the proportion of household income spent on food.

REVIEW OF LITERATURE

In 1965, Orshansky estimated equivalent income thresholds for various households varying by size (4). These thresholds were derived from food budgets pro-

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¹ Italicized numbers in parentheses refer to items in References at the end of this article.

viding adequate nutrition for alternative household sizes. These budgets were priced out and multiplied by three, on the grounds that a poor household typically spends as much as a third of its income on food. As pointed out by Wetzler and others, this approach tries to make a comparison of welfare which is based on an opinion of physical food needs rather than on the actual market behavior of households (8). Thus, this approach assumes economies of size do not exist for food.

An alternative approach is to develop equivalent income thresholds based on actual market behavior. In 1968, the Bureau of Labor Statistics estimated equivalent income thresholds for urban households based upon their size and composition from data contained in the 1960-61 BLS Consumer Expenditure Survey (9). Households were grouped into various categories depending on size and composition and household food expenditures were assumed to be related mathematically to household income as follows: $E_i = K_i Y_i^{1/2}$, where E_i is the average expenditure on food by households in the i th group, Y_i is the average income of households in the i th group, and K_i is a constant term which is assumed to vary between household groups. The BLS approach assumes for all household groups the food income expenditure elasticity equals 0.5. Although BLS analysts attempted to test the validity of this assumption, their approach assumes a very simple household food expenditure relationship.

Using this assumed mathematical relationship between household food expenditures and income, BLS analysts then computed the ratio of household income for household types i and j (Y_i/Y_j) so that both household types spent the same proportion of their income on food. This ratio was assumed to measure the relative change in income between household types i and j , which yielded equivalent levels of income for these two households.

For example, assume this calculated ratio turned out to be 1.5, when comparing a household consisting of a middle-aged couple and a child aged 15 with a base household consisting of an adult male. This result would imply that the first household would need 1.5 times more income to reach the equivalent income threshold defined for the second household. Thus, if the poverty line is assumed to equal \$3,000 for households consisting of an adult male, the corresponding poverty line for the 3-person household would equal \$4,500.

The BLS approach for estimating equivalent income thresholds has some shortcomings. Consider two households wherein the first has a larger income and spends a smaller share of its income on food than the second. Using the BLS approach, we would conclude that the first household is "better off." However, if both households had the same level of income, it is conceivable that the first household could spend a larger share of its income on food than would the second. In this case, the BLS approach would have us conclude that the first household is "worse off" than the second.

This potential contradiction in results stems from the failure of BLS to control for the impact of household

income. For example, in the 1968 BLS report, the calculated equivalent income threshold was higher for a household consisting of a husband, wife, and child 16-17 years of age than for a household of a husband, wife, and child 18 years or over. The BLS explanation of this result is as follows. A "study of the food-income relationship for these (households) groups suggests that although average food expenditures continue to rise for the 18-and-over type, incomes rise faster."

Thus, even though food expenditures are higher for the household with an 18-year-old child, its equivalent income threshold is lower than for a household consisting of a husband, wife, and a child 16-17 years of age. If welfare benefits are distributed based on these scales, welfare payments to the household with the 18-year-old or older child will be less than that for the other household even though food expenditures are higher for the first household. The result is annoying to say the least, as the proportion of income spent on food is used to compare the general welfare of different households.

Another shortcoming of the BLS approach is the failure to estimate the influence of socioeconomic and demographic characteristics on the amount of household income spent on food. This shortcoming prompted Watts in 1967 to estimate equivalent income thresholds for households in different geographical locations (7). The estimated differences in the income thresholds by geographical location were mainly assumed to reflect price discrepancies. The principal shortcoming of the Watts approach is the failure to estimate the impact of household composition on the equivalent income thresholds. We now report on an alternative procedure for estimating equivalent income thresholds.

AN ALTERNATE APPROACH

THE DATA

Our data consist of the spring portion of the 1965 USDA Household Food Consumption Survey (HFCS), in which 7,532 households were interviewed. The interviewer recorded the cost of food used at home during the 7 days preceding the interview as well as a count of meals eaten at home and away from home for each household member. Data were also collected on household characteristics, including age and sex of each member; race, education, and employment status of the female head; and geographical location. Household after-tax income was recorded for both 1964 and 1965.

EMPIRICAL MODEL

Estimation of the impact of household composition on household food expenditures is quite cumbersome, which probably explains why many economists have ignored this relationship. One method of measurement is through the estimation of adult-equivalent scales. In essence, they are indices that specify the impact a particular

member has on household food expenditures as a percentage of the impact on household food expenditures caused by a "standard" or "base" person. The adult male is usually chosen as the "base" individual and his scale value is set equal to 1.0. Hence, the name adult equivalent scale. The number of adult equivalents is defined as the sum of the adult-equivalent scale values for all household members. If the age and sex composition of households is important in explaining household food purchases, the number of adult equivalents in the household will not only depend on household size, but also on the age and sex of members.

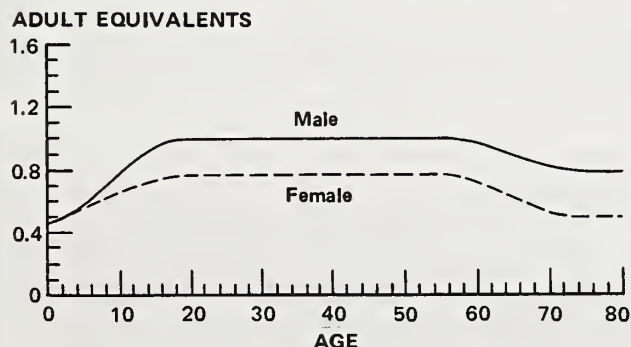
As indicated earlier, household expenditures on food are also likely to be affected by geographical location. The main (but not necessarily only) difference in household food expenditures across geographical locations is probably due to price discrepancies. Higher food prices in one region compared with another increase the amount of income the household in the higher priced region must spend to obtain the same bundle of food commodities. Such additional income would depend on the cost of the food budget which, in turn, is also related to the household's size and composition.

Household food expenditures may also be affected by such factors as the race, educational level and employment status of the household head. The 1965 USDA HFCS, the most recent comprehensive data available at this time, provided data on these factors for the female head of the household. (See (2) for a more indepth description of the empirical model.)

RESULTS

Regression techniques were used to estimate the influence of household size and composition, household income, geographical location, and other factors on household food expenditures. The estimated adult-equivalent scale for food, presented in figure 1, indicates that household food expenditures increase with the age of the children. Holding age constant, females have less effect on

**FIGURE 1
ESTIMATED ADULT EQUIVALENT SCALE
FOR FOOD**



food expenditures than males. Holding sex constant, middle-aged persons have more impact on food expenditures than the elderly.

Given the size and age/sex composition of the household, the number of adult equivalents can be calculated by summing the adult-equivalent scale values across all household members (table 1). Obviously, the number of adult

Table 1—Adult equivalents by household type

Household type ¹	Adult equivalent
One person	
Adult male (20-25)	1.00
Adult female (20-55)	.77
Elderly male (75+)	.78
Elderly female (75+)	.49
Two person	
Adult male (20-55), adult female (20-55)	1.77
Elderly male (75+), elderly female (75+)	1.27
One parent (20-55), child (10)	1.58
Three person	
Adult male (20-55), adult female (20-55), child (0)	2.21
Adult male (20-55), adult female (20-55), child (10)	2.46
One parent (20-55), two children (10)	2.28
Four person	
Adult male (20-55), adult female (20-55), two children (5)	2.87
Adult male (20-55), adult female (20-55), two children (10)	3.16
Adult male (20-55), adult female (20-55), two children (15)	3.42
One parent (20-55), three children (10)	2.97
Five person	
Adult male (20-55), adult female (20-55), three children (5)	3.42
Adult male (20-55), adult female (20-55), three children (10)	3.86
Adult male (20-55), adult female (20-55), three children (15)	4.25
One parent, four children (10)	3.67
Seven person	
Adult male (20-55), adult female (20-55), five children (5)	4.52
Adult male (20-55), adult female (20-55), five children (10)	5.25
Adult male (20-55), adult female (20-55), five children (15)	5.90
One parent, six children (10)	5.06
Ten person	
Adult male (20-55), adult female (20-55), eight children (5)	6.17
Adult male (20-55), adult female (20-55), eight children (10)	7.34
Adult male (20-55), adult female (20-55), eight children (15)	8.38
One parent, nine children (10)	7.15

¹ The numbers in parentheses denote the age or average age of person(s) for a given household type. For children and parents for which sex is not given, we derived the scales by averaging the scales values for males and females at the age given in parentheses.

equivalents increases with household size and average age of children.

Having estimated the relationship between household food expenditures and household income, size and composition, geographical location, and other variables, we can now predict the proportion of income spent on food by various households. This proportion is *not* independent of household income. Obviously, on the average, households with high income spend a lower proportion of their income on food than do those with low income. As our focus is on the distribution of welfare benefits, we selected a numerical value for the proportion of household

income spent on food that represented households at the poverty line. A review of literature on identifying the poor revealed that the most widely accepted value is 30 percent. Many economists may quarrel with this selection. However, the results presented earlier may be used to derive equivalent income thresholds for alternative households based on any specified value for the proportion of income spent on food.

Equivalent income thresholds for households depending upon their size and composition and geographical location were derived (table 2). Thresholds in table 2 denote the amount of after-tax income in 1965 a given household

Table 2—Estimated equivalent income (after taxes) thresholds, for household types, by region and urbanization, 1965

Household type ¹	Urban				Rural nonfarm				Rural farm			
	North east	North-Central	South	West	North-East	North-Central	South	West	North-east	North-Central	South	West
<i>Dollars</i>												
One person												
Adult male ²	2,372	2,098	2,090	2,284	2,346	2,072	2,063	2,257	2,470	2,196	2,188	2,382
Adult female	1,943	1,730	1,726	1,879	1,925	1,713	1,708	1,861	2,021	1,809	1,804	1,957
Elderly male	1,962	1,747	1,742	1,896	1,944	1,728	1,724	1,878	2,041	1,826	1,821	1,975
Elderly female	1,416	1,280	1,278	1,378	1,406	1,270	1,269	1,368	1,467	1,331	1,330	1,429
Two person:												
Adult male, adult female	3,781	3,308	3,279	3,596	3,716	3,243	3,214	3,531	3,938	3,465	3,436	3,753
Elderly male, elderly female	2,871	2,526	2,512	2,751	2,833	2,487	2,474	2,713	2,991	2,646	2,632	2,872
One parent, child (10)	3,437	3,012	2,989	3,278	3,383	2,958	2,935	3,224	3,581	3,156	3,134	3,422
Three person:												
Adult male, adult female, child (0)	4,586	4,000	3,954	4,332	4,491	3,905	3,858	4,237	4,769	4,185	4,138	4,516
Adult male, adult female, child (10)	5,010	4,365	4,307	4,716	4,896	4,251	4,193	4,602	5,205	4,562	4,504	4,912
One parent, two children (10)	4,692	4,092	4,043	4,429	4,593	3,992	3,943	4,329	4,879	4,280	4,230	4,616
Four person:												
Adult male, adult female, two children (5)	5,724	4,982	4,902	5,355	5,575	4,832	4,752	5,206	5,936	5,196	5,116	5,569
Adult male, adult female, two children (10)	6,222	5,412	5,314	5,796	6,045	5,235	5,137	5,618	6,444	5,637	5,539	6,019
Adult male, adult female, two children (15)	6,663	5,795	5,679	6,182	6,460	5,590	5,474	5,978	6,892	6,026	5,910	6,413
One parent, three children (10)	5,896	5,131	5,045	5,508	5,738	4,972	4,886	5,350	6,113	5,349	5,263	5,726
Five person:												
Adult male, adult female, three children (5)	6,663	5,795	5,679	6,182	6,460	5,590	5,474	5,978	6,892	6,026	5,910	6,413
Adult male, adult female, three children (10)	7,382	6,418	6,270	6,804	7,130	6,164	6,015	6,551	7,619	6,657	6,509	7,042
Adult male, adult female, three children (15)	8,039	6,989	6,807	7,363	7,737	6,684	6,501	7,059	8,278	7,230	7,048	7,603
One parent, four children (10)	7,083	6,158	6,024	6,547	6,852	5,926	5,790	6,315	7,317	6,395	6,260	6,782
Seven person:												
Adult male, adult female, five children (5)	8,476	7,370	7,162	7,729	8,137	7,027	6,819	7,388	8,714	7,610	7,402	7,968
Adult male, adult female, five children (10)	9,630	8,377	8,092	8,675	9,181	7,923	7,637	8,221	9,855	8,604	8,320	8,901
Adult male, adult female, five children (15)	10,624	9,248	8,884	9,460	10,062	8,680	8,314	8,893	10,825	9,451	9,088	9,663
One parent, six children (10)	9,333	8,118	7,854	8,435	8,914	7,694	7,430	8,013	9,563	8,350	8,087	8,666
Ten person:												
Adult male, adult female, eight children (5)	11,027	9,602	9,202	9,771	10,415	8,892	8,580	9,152	11,215	9,792	9,393	9,960
Adult male, adult female, eight children (10)	12,709	11,086	10,508	11,006	11,851	10,215	9,632	10,134	12,814	11,192	10,615	11,112
Adult male, adult female, eight children (15)	14,112	12,333	11,566	11,947	12,995	11,917	10,422	10,807	14,108	12,329	11,562	11,943
One parent, nine children (10)	12,443	10,851	10,304	10,818	11,628	10,024	9,473	9,990	12,564	10,973	10,427	10,940

¹ The numbers in parentheses denote the age or average age of person(s) for a given household type. For children and parents for which sex is not given, we derived the scales by averaging the scale values for males and females at the age given in parentheses.

² Adult refers to a person 20-55 years of age. Elderly refers to a person 75 years of age or older.

would require to reach the poverty line, assuming all meals are consumed at home.² Normal caveats are applicable when interpreting these results. The equivalent income thresholds were generated for specific types of households by geographical location from average differences found in household food expenditure behavior. Therefore, they may not totally measure the income specific households might require to reach the poverty threshold.

Notice the estimated equivalent income thresholds vary significantly, depending on not only the household's size, but its composition and geographical location. For example, for a four-person household consisting of a married middle-aged couple and two children averaging 5 years of age, the figure was \$5,724, compared with \$6,663 for a four-person household consisting of a married middle-aged couple and two children averaging 15 years of age, if both households are in the urban Northeast. As demonstrated in figure 2, the equivalent income

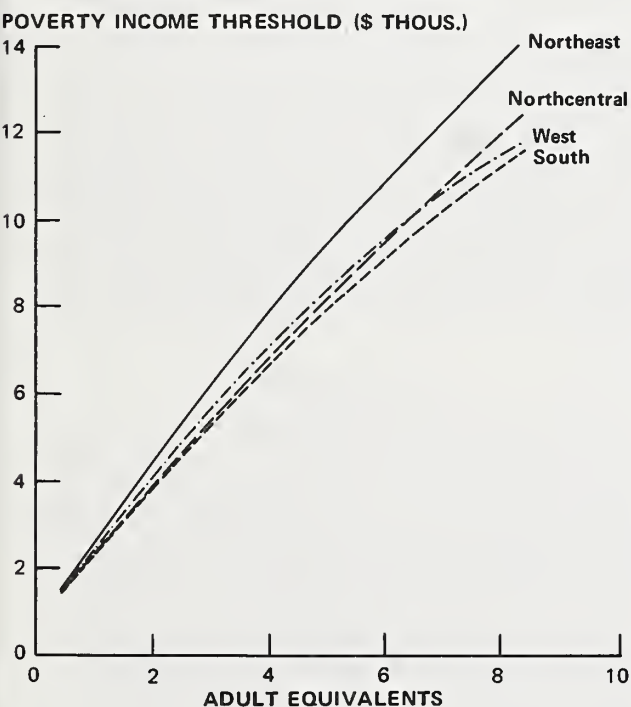
thresholds increase at a diminishing rate as the number of adult equivalents increase for each geographical location.

For example, the equivalent income threshold for a household in the urban Northeast with one adult male (one adult equivalent) was \$2,372, compared with \$4,586 for a household living in the same location containing an adult male, adult female, and newborn baby (2.21 adult equivalents). In this example, the number of adult equivalents increased by a factor of 2.21; however, the equivalent income threshold increased by 1.93. The result implies significant economies of size in household food purchases.

Holding urbanization level constant, the equivalent income threshold for a specific household type was highest in the Northeast and lowest in the South. In addition, the regional differences in the equivalent income thresholds magnified as the number of adult equivalents in the family increased. For example, the equivalent income threshold was \$274, \$282, and \$88 greater for an urban family containing one adult male residing in the Northeast than for that same family residing in the North-Central Region, South, or West, respectively. However, the equivalent income threshold was \$1,050, \$1,232, and \$676 greater for an urban household consisting of an adult male, female, and three children averaging 15 years of age, residing in the Northeast, than for that same household in the North-Central Region, South, or West, respectively.

FIGURE 2
EQUIVALENT INCOME THRESHOLDS FOR
URBAN HOUSEHOLDS

By Region and Number of Adult Equivalents



² As race, education level, and employment status of the household's female head affect household food expenditures, these factors also affect the equivalent income threshold. In table 2 the calculated income thresholds were determined for households whose female head was white, had zero to 8 years of education and was not employed outside the home.

COMPARISON WITH OTHER STUDIES

BLS has published equivalent income thresholds for households differing by size and composition, age of household head, and place of residence (9). These income thresholds exclude personal and social security taxes and are based on 1966 price levels (table 3).

Several comparisons can be made of tables 2 and 3. The BLS estimated equivalent income thresholds for household types—husband and wife; husband, wife, 1 child under 6 years; husband, wife, two children under 6 years—vary only moderately with those for household types: adult male and adult female; adult male and female with one child 10 years; and adult male and adult female with two children of average age 5 years, respectively, given in table 2. However, for elderly couples, the BLS income thresholds are higher than those for married couples under 35 years, which disagrees with the results presented in table 2. This result is difficult to rationalize, as one would not expect a retired or elderly couple to have a higher food budget or even a higher total budget than a married couple under 35 years of age.

The equivalent income thresholds estimated by BLS changed substantially with the age of the husband, wife, and children. For example, the equivalent income threshold for a household consisting of a husband and wife under 35 years and two children, the older under 6 years,

Table 3—BLS estimates of equivalent income thresholds for households differing by size, composition, and age, autumn 1966¹

Household type	Urban ²				Rural			
	North-east	North-Central	South	West	North-east	North-Central	South	West
	<i>Dollars</i>							
One person:								
Single person, under 35 years	2,668	2,574	2,406	2,686	2,510	2,390	2,210	2,450
Single person, 65 years and over	2,141	2,029	1,903	2,097	1,980	1,850	1,680	1,910
Two person:								
Husband and wife, under 35 years	3,723	3,604	3,367	3,759	3,510	3,340	3,090	3,430
Husband and wife, 65 years and over	3,892	3,689	3,460	3,813	3,603	3,360	3,051	3,466
Three person:								
Husband and wife, under 35 years, one child under 6	4,724	4,559	4,261	4,756	4,440	4,230	3,910	4,350
Husband and wife, 35-54 years, one child, 6-15 years	6,250	6,029	5,636	6,289	5,880	5,590	5,170	5,750
Four person:								
Husband and wife, under 35 years, two children, oldest under 6	5,485	5,294	4,948	5,521	5,160	4,910	4,540	5,550
Husband and wife, 35-54 years, two children, oldest 6-15 years	7,621	7,352	6,858	7,670	7,166	6,819	6,310	7,008
Five person:								
Husband and wife, 35-54 years, three children, oldest 6-15 years	8,840	8,530	7,973	8,890	8,310	7,910	7,320	8,130

¹ Excludes gifts and contributions, life insurance, occupational expenses, social security and disability payments, and personal tips.

² Equivalent income thresholds were derived by averaging the poverty income thresholds for all cities in a given region for a specified family type.

was \$5,485. For a household consisting of a husband and wife aged 35-54 years, and two children, the oldest 6-15 years old, the figure was \$7,621. It is assumed that both households reside in the urban Northeast. However, table 2 suggests that the income threshold increased by only about \$1,000 as the average age of the children in a four-person household rose for 5 to 15 years. The BLS estimate also seems high compared with the average income of households which was \$6,232 in the 1965 USDA HFCS.

Table 4 contains comparisons of the estimated equivalent income thresholds for selected household types from several studies. It is evident that the thresholds we obtained vary only moderately with those derived by other researchers. However, in table 4, comparisons are not in absolute terms and cover few household types. In addition, the impact of geographical location is also ignored. Thus, some basic differences between the results may be hidden, as was evident in comparing the results obtained from our and the BLS approaches.

CONCLUSIONS

The equivalent income thresholds we developed may be used to determine the eligibility and amount of welfare payments alternative households should receive if the objective of welfare program administrators is to distribute welfare payments equitably. In addition, these thresholds may be used as benchmarks to determine inequities in the distribution of welfare program benefits. For example, consider whether Food Stamp Program benefits are currently being distributed equitably among eligible households. Currently, the bonus value of food stamps an eligible household receives is based on two factors: the household's income and its size. However, the estimated equivalent income thresholds we have presented also vary depending on household composition and geographical location. Thus, a more equitable distribution of Food Stamp Program benefits could be attained if the bonus value of food stamps reflected food price discrepancies across geographical locations and/or varied depending on the age/sex composition of household members.

Table 4—Equivalent income thresholds expressed as percentage of income required by selected four-person households

Household type	BLS		This study, 1965	IDA ³	Nutritive adequacy 1964 ⁴	SSA poverty index-economy level ⁵	WPA maintenance budget ⁶	Adequacy of diets 1935-36 ⁷	USDA Food Stamp 1977 ⁸
	1960-61 ¹	1950 ²							
One person	36	50				49			44
Average, adult male and female			35						
Two persons									
Married couple	60	66	61	64	59	64	67	65	58
Three persons									
Married couple, child 6-15	82	87		82	81	78		84	78
Married couple, boy 13							87		
Married couple, child, average age 10			81						
Four persons:				100	100	100		100	100
Married couple, 2 children, older 6-15	100	100							
Married couple, boy 13, girl 8							100		
Married couple, 2 children, average age 10			100						
Five persons:				116	116	118		115	119
Married couple, 3 children, oldest 6-15	116	120							
Married couple, boy 13, girl 8, child 6							114		
Married couple, 3 children, average age 10			119						

¹U.S. Department of Labor, Bureau of Labor Statistics. "Revised Equivalence Scale for Estimating Equivalent Incomes or Budget Costs by Family Type." Bull. 1570-2, Wash., D.C., Nov. 1968; age of head 35-54 years. ²"Estimating Equivalent Incomes or Budget Costs by Family Type," *Monthly Labor Rev.*, Nov. 1960; age of head 35-54 years. ³Elliot Wetzler. *Determination of Poverty Lines and Equivalent Welfare*. Inst. Defense Anal., Res. paper P-277, Sept. 1966. Based on food-consumption-income relationships for urban families derived by regression analysis of cross-section data from the BLS Survey of Consumer Expenditures, 1960-61. ⁴Rose Friedman. *Poverty, Definition and Perspective*. Am. Enterprise Inst. for Public Policy Res., Wash., D.C., Feb. 1965. Based on 1962 incomes at which nonfarm households of varying sizes achieve nutritive adequacy—where nutritive adequacy is defined as 75 percent of the families meeting two-thirds of their recommended allowances of the National Research Council. ⁵Mollie Orshansky. "Counting the Poor: Another Look at the Poverty Profile." Soc. Security Bull., Jan. 1965, nonfarm families of 3 persons or more classified as poor when their annual money income was less than 3 times the cost of the USDA economy food plan designed to provide adequate nutrition. Different definition were developed for 1- or 2-person families. ⁶Leila M. Easson and Edna C. Wentworth. "Techniques for Estimating the Cost of Living at the WPA Maintenance Level for Families of Different Composition." Soc. Security Bull., Mar. 1947. Scales calculated from costs of WPA Maintenance Budget in St. Louis, June 15, 1941, age of head 36-47 years. ⁷U.S. Department of Labor, Bureau of Labor Statistics. *Workers Budgets in the United States: City Families and Single Persons . . . 1946 and 1947*. BLS Bull. 927, 1948. Based on percentage of families with adequate diets by income, 1935-36. ⁸Based on the maximum net monthly income standards during Jan. 1, 1977-June 30, 1977.

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NATIONAL VERSUS STATE-LOCAL ELIGIBILITY STANDARDS

By Thomas A. Carlin and Linda M. Ghelfi*

ABSTRACT

Transfers are an important source of income to rural people, and public-assistance income is an important component of the transfer system. The current welfare system does not work in favor of rural areas. Thus, most broad-based welfare reform proposals benefit rural areas. Horizontal equity becomes harder to achieve as one moves away from cash programs for public assistance to jobs-type programs.

KEYWORDS: Rural areas, rural development, public assistance, welfare reform.

INTRODUCTION

The main theme of the third food policy seminar is the equitable distribution of food aid benefits. USDA food assistance programs, specifically food stamps (FS), are viewed as a component of the national public-assistance system which includes Aid to Families with Dependent Children (AFDC), Supplemental Security Income (SSI), and other minor Federal programs (not discussed here). In this article, we are concerned primarily with horizontal equity as to the distribution of welfare benefits among families by region and residence. Horizontal equity, as usually defined in the welfare literature, means the degree to which all families of the same size, composition, and income level are treated equally under program rules. The somewhat related issue of equitable fiscal relief to States, while a most critical issue in the current welfare reform debates, will not be directly addressed in this article.

A RURAL PERSPECTIVE

We approach the topic of equity from a different perspective than other speakers at this seminar. We are concerned primarily with the impact of changing welfare program rules on the distribution of welfare benefits to rural areas—a rural development perspective. Rural is defined specifically as nonmetropolitan.¹ There is substantial literature on State and regional differences in welfare eligibility standards; specifically with respect to the

AFDC program, and the concomitant distribution of welfare benefits (7, 8).² Herein, we add an additional array to these analyses by introducing a residence variable—where families live within the State or region.

Why should persons concerned with economic and social conditions in rural areas have an interest in welfare programs? Public and private transfers (Social Security, unemployment insurance, public assistance, etc.) are an important component of U.S. total personal income, and transfers become more important the more *rural* an area is (table 1). While transfer income accounted for 11 percent of total personal income in metropolitan areas in 1974, it accounted for 17 percent of personal income in the most isolated rural counties. In fact, income from

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¹ Standard Metropolitan Statistical Areas (SMSA's) include counties containing cities of 50,000 or more inhabitants and counties which are economically and socially integrated with the cities. Counties without these characteristics are nonmetropolitan. We have used the Office of Management and Budget's 1973 delineation of counties as metropolitan or nonmetropolitan.

² Underscored numbers in parentheses refer to items in References at the end of this article.

Table 1—Personal income by source and place of residence, 1974

Residence	Counties	Source of personal income						
		Labor income	Proprietor income		Property	Transfers	Social insurance contributions	Total
			Total	Farm				
	<i>Number</i>	<i>-----Billion dollars-----</i>						
Metropolitan	612	660.8	51.1	6.3	128.7	103.2	-38.8	905.0
Nonmetropolitan	2,485	147.8	36.6	21.8	34.2	36.8	-8.9	246.5
Urbanized: ¹								
Adjacent to SMSA	191	41.4	6.1	2.7	8.9	8.7	-2.4	62.7
Nonadjacent to SMSA	137	29.2	4.4	2.1	5.2	5.4	-1.7	42.5
Less urbanized: ²								
Adjacent to SMSA	564	31.3	8.7	5.3	8.0	8.7	-1.9	54.8
Nonadjacent to SMSA	721	34.1	10.9	7.0	8.3	9.4	-2.2	60.5
Totally rural: ³								
Adjacent to SMSA	246	4.0	1.7	1.1	1.2	1.5	-0.2	8.2
Nonadjacent to SMSA	626	7.8	4.8	3.6	2.6	3.1	-0.5	17.8

¹ Counties having 20,000 or more urban residents (people living in a place or township of 2,500 or more residents).

² Counties having more than 2,500 but less than 20,000 urban residents.

³ Counties having no place with more than 2,500 residents.

Source: Special tabulations of local area personal income data developed by the Bureau of Economic Analysis, U.S. Department of Commerce.

transfers was larger than proprietors' income from farming in all but the most isolated rural nonmetropolitan counties. Food stamps, AFDC, and SSI benefits accounted for about 11 percent of total transfer income.

In 1975, a larger proportion of welfare program participants, particularly SSI and Food Stamp recipients, lived in the more rural nonmetropolitan areas of the United States than was true of the total population (table 2). Of the total population, 3.3 percent lived in totally rural counties while these counties contained 4.4 percent of all food stamp recipients and 6.1 percent of all SSI recipients. This result is consistent with the observed higher incidence of poverty among the nonmetropolitan population, particularly among the aged. While nonmetro areas contained 32 percent of all U.S. families in 1975, 40 percent of all poor families resided there. We will present data related to this last point shortly.

THE FEDERAL WELFARE SYSTEM

Let us briefly review the basic characteristics of the major federal welfare programs. The AFDC program (provides benefits to only certain types of families) which encourages care of dependent children in their own homes or homes of relatives. Federal assistance is limited primarily to single-parent families, mostly mothers with dependent children, to orphaned

or deserted children living with relatives, and, in 27 States, to two-parent families where the father is either incapacitated or unemployed. The AFDC program is jointly financed by Federal, State, and local governments. The Federal share of the basic payment varies by State, depending upon formulas which take the State's per capita income into consideration. Each eligible family must pass income and asset tests specified by the individual States. Each State establishes its own needs standard which covers basic clothing, food, and shelter costs and varies by family size and other factors. States are not required to pay recipients the full amount of needs standards; thus, the proportion paid varies by State.

The SSI program is a federally funded categorical program which assists only the aged (65 and older), the blind, and the permanently and totally disabled. National means tests limit the amount of income and assets a couple or a single person may have to participate. States may opt to supplement Federal SSI benefits. By the end of 1975, except for Texas, all 50 States provided some supplementation.

The Food Stamp Program, although locally administered, is fully federally funded. There are no categorical eligibility restrictions for food stamps. The program is available to any household which can pass the federally set income and assets tests. Two-thirds of the households receiving food stamps

Table 2—Total population and welfare program participants, by residence, 1975

Residence ¹	Total population July 1975	Participants in—			Benefits from—		
		Food Stamps, July 1975	AFDC, February 1975	SSI, December 1975	Food Stamps, July 1975	AFDC, February 1975	SSI, December 1975
		<i>Percent</i>					
Metropolitan	72.8	71.0	78.9	62.4	70.6	84.0	69.0
Nonmetropolitan	27.2	29.0	21.1	37.6	29.4	16.0	31.0
Urbanized	10.6	9.3	8.3	10.9	9.6	6.9	9.7
Adjacent to SMSA	6.4	5.3	4.8	6.0	5.4	4.3	5.6
Nonadjacent to SMSA	4.2	4.0	3.5	4.9	4.2	2.6	4.1
Less urbanized	13.3	15.3	10.1	20.6	15.4	7.2	16.5
Adjacent to SMSA	6.6	7.2	4.7	10.0	7.3	3.3	8.0
Nonadjacent to SMSA	6.7	8.1	5.4	10.6	8.1	3.9	8.5
Totally rural	3.3	4.4	2.7	6.1	4.4	1.9	4.8
Adjacent to SMSA	1.2	1.7	0.9	2.2	1.6	0.6	1.7
Nonadjacent to SMSA	2.1	2.7	1.8	3.9	2.8	1.3	3.1
Total number (1,000)	213,054	17,189	10,994	4,175	394,143	733,995	463,135

¹ See footnotes in table 1 for definition of residence.

Source: Population from 1975 Current Population Survey and participants and benefits from special tabulations from published program data.

receive benefits under other public-assistance programs, and 42 percent of the program's participants in 1975 were AFDC families (9).

The Federal welfare system can be summed up as follows. Except for food stamps, the system is categorical; that is, it administers to only certain types of families and individuals. The largest program, AFDC, has payment standards established by individual states, whereas FS and SSI have national payment standards; thus, we have a State-national system of payment standards.

How are the benefits from the current welfare system distributed by place of residence? How does this distribution change as the eligibility rules are changed? Does moving from the current system of State-national eligibility standards to a system of national standards only improve horizontal equity (as used in this particular instance)?

DISTRIBUTION OF WELFARE BENEFITS

One could use a number of methods to develop data necessary to address these questions. Budgeting could be used to determine benefits for specified family situations (for example, intact family of four with no outside income) in differing locations through the country under

alternative program rules—a procedure used by the staff of the Subcommittee on Fiscal Policy, Joint Economic Committee of the U.S. Congress, some years ago (7). Very limited survey data are available with which to address the issue. For our purposes, we used available data developed at the request of the Economic Development Division, ESCS, a year or so ago by the Urban Institute using its Transfer Income Model (TRIM) (2). Using data from the March 1973 Current Population Survey, TRIM simulated benefits for those eligible to participate in the AFDC and Food Stamp programs, during calendar year 1976, and for those eligible to participate in a broad-based national welfare program.

The program analyzed was the Joint Economic Committee's Income Security for Americans (ISA) program (5, 6).³ The specific program rules and assumptions about the behavior of the national economy used in the simulation are fully described in the published final report (2). We

³ At the request of the Economic Development Division, the Urban Institute is using TRIM to simulate benefits for those eligible to participate in the Better Jobs and Income Program proposed by the Carter Administration. Although final results were not available for this article, preliminary analysis shows that BJIP would have distributional effects similar to those of ISA.

briefly summarize the results of the study, primarily to suggest answers to the above questions on distribution of benefits and effects of moving to strictly national standards. The results presented will be limited to the AFDC and Food Stamp programs combined. These results are not unlike those resulting from analysis of other programs involving negative income tax type programs (such as the Family Assistance Plan) (3, 8).

The TRIM analysis of ISA was done using urban-rural as the key residence variable. This residence classification (see urban-rural definitions in table 3) is not identical to the metro-nonmetro classification we referred to earlier; however, comparisons of highly populated cities and more sparsely populated areas can be made.

The last column in table 3 shows the relative distribution by region of AFDC and Food Stamp program benefits as they are generally understood. That is, the proportion of total benefits going to Southern eligible families is less than the proportion of total eligible families residing in the South. Eligible residents in the Northeast receive a higher proportion of total program benefits than their eligible population distribution would suggest.

Consideration of place of residence, however, modifies the above conclusion. Eligible rural residents, particularly outside the Northeast, also receive a lower proportion of AFDC and Food Stamp program benefits than their eligible population distribution would suggest (table 3). In addition, nonmetro-urban residents outside the West receive lower total benefits relative to the distribution of eligible families. The share of benefits going to metro-urban eligible families in the Northeast and North Central regions greatly exceeds their proportion of the eligible population.

Residence in the South appeared to be the strongest factor of those considered in this study affecting the distribution of benefits. This is due to benefits of the AFDC program being the State-determined. Southern urbanites also received less in benefits than their population distribution would suggest. However, both regional and residential factors are important in determining the distribution of benefits to eligible families.

Shifting to a program (ISA) with national benefit levels and no categorical eligibility (serving all indigents) would benefit rural residents and residents in the South.

Table 3—Share ratio for the AFDC and Food Stamp (FS) programs and Income Security for Americans, 1976¹

Type of program and region	Residence ²				All residence
	Urban		Rural		
	Metro areas	Nonmetro areas	Nonfarm	Farm	
	<u>Ratio</u>				
AFDC-FS:					
Northeast	1.53	0.89	1.12	0.93	1.42
North Central	1.24	.75	.78	.72	1.02
South	.83	.63	.71	.71	.74
West	1.11	1.06	.96	.58	1.07
All regions	1.18	.74	.81	.70	—
Income Security for Americans:					
Northeast	1.03	.69	.84	.91	.97
North Central	.99	.70	.83	1.16	.92
South	1.12	.95	1.12	1.29	1.10
West	.93	.97	1.07	.83	.96
All regions	1.02	.85	1.00	1.20	—

¹ The share ratio is the percentage of aggregate benefits received by the group divided by the percent that group represents of the total eligible population.

² Urban residence includes all urbanized areas of 50,000 or more inhabitants (metropolitan) and places of 2,500 or more inhabitants outside urbanized areas (nonmetropolitan). Rural residence encompasses the remaining area with people living on farms making up one subgroup and people not living on farms making up the other.

Source: Special tabulations from the Urban Institute's TRIM simulation.

The regional and residential disparity noted in the AFDC and Food Stamp programs would be reduced under a national program. Extreme differences noted in the share ratio (0.58 to 1.53) under the AFDC and FS programs would be substantially reduced under the national program.

Rural areas, particularly in the South, are expected to benefit from nationalized welfare eligibility standards for two reasons. First, as noted above, benefit levels provided by most proposals to completely nationalize the welfare system are substantially higher than benefits provided by current programs in the South. Such programs would increase the income flow to nonmetropolitan residents because over 60 percent of nonmetro poor reside in the South (table 4).

Second, most national welfare reform proposals provide public-assistance benefits to male-headed families

(specifically, the "working poor"), single individuals, and families with no children under 18, all of whom are generally excluded from the current AFDC program (except for AFDC-Unemployed Father benefits offered in 27 States).

Thus, the current welfare system, dominated by categorical eligibility and State-national benefits standards, works to the disadvantage of rural areas and a nationalized welfare system overcomes that disadvantage.

There is considerable interest in incorporating costs of living differentials into national welfare benefit structures. To the extent that it is cheaper to live in some regions and in rural areas, real benefits to nonmetro recipients will be higher than those going to recipients in metro areas—if a single national benefit level is used. President Carter, on May 2, 1977, when establishing goals for welfare reform, stated that the welfare system should provide "a decent income. . .with Federal benefits consolidated into a simple

Table 4—Residential and regional distributions of families and unrelated persons in poverty, 1975

Family type	Number of persons (thousands)	Percentage in nonmetro areas	Percentage of nonmetro persons living in—			
			Northeast	North Central	South	West
			<i>Families</i>			
All families	55,712	32	15	29	44	12
All poor families	5,108	40	8	19	62	11
Poor families with:						
Male head < 65	2,141	49	8	20	59	13
Employed	1,318	52	7	22	57	14
Male head \geq 65	616	56	4	21	70	5
Female head < 65	2,208	26	11	16	61	12
Employed	625	30	4	27	58	11
With children < 18	1,964	25	11	16	60	13
Childless couples	501	49	5	21	61	13
			<i>Unrelated individuals</i>			
All unrelated individuals	18,885	27	16	31	39	14
All poor unrelated individuals	4,824	36	14	26	48	12
Less than 65	2,755	30	16	23	45	16
Employed	1,163	32	17	25	42	16
65 and over	2,068	44	11	29	52	8

Source: Special tabulations from the March 1975 Current Population Survey Public Use Tape.

cash payment, varying in amount only to accommodate differences in costs of living from one area to another" (10).

However, H.R. 9030, Better Jobs and Income Bill, to our knowledge carries no provision which allows for regional and residential differentials in benefits to reflect cost of living differences. While such a notion of "real horizontal equity" may make some conceptual sense, it would be extremely difficult to implement because data necessary for such a determination are not yet available. Most existing data either sufficiently sample only a limited residential group, such as urban wage earners, or cover only a limited consumption category. Examination of Bureau of Labor Statistics (BLS) family budgets suggests that living costs vary considerably among major urban areas within regions (11). The same situation is likely to be true for rural areas.

Thus, it would be difficult to develop simple residential differentials that would be equitable. If improved horizontal equity is the primary reason to incorporate regional and residential cost-of-living differences into benefit determination, then the "error" incurred by using such a system may well be equal to or greater than the "error" incurred by a single national standard, given data available today.

Up to this point, we have been able to accommodate horizontal equity fairly well by looking at the structure of most cash transfer programs. That is, family structure and income and assets are the primary variables considered in determining benefits. As we move away from examining basic cash assistance programs and into programs designed to provide public-service jobs to the indigent deemed able to work, the concept of horizontal equity, particularly as it relates to residence, becomes more complicated. We now must consider differences in local labor markets and local governments. Because most families in poverty tend to be transitory poor (that is, their income vary about the poverty line) rather than permanently poor, demand for public-service jobs under such a program would be affected by the local business cycle. When business conditions are good and employment high, they may not fall in the "poverty" class. And, as a recent Rand Corporation study confirms, few local labor market areas have employment cycles which conform to variations in the Nation's employment situation (12).

A major purpose of most public-service employment proposals is to provide its participants with marketable job skills. In most cases, these skills should reflect job opportunities within the local private-sector labor market. Rural labor markets generally have fewer alternative occupation opportunities than do labor markets in urban areas. At the same time, there are likely to be fewer employment opportunities in rural areas for persons possessing specific job skills. Thus, it is harder and more critical to structure successful rural public-service employment programs than to structure similar urban programs.

The method for administration of the existing Comprehensive Employment and Training Act (CETA) public-

service employment programs (Title II and VI) is not always responsive to the needs of rural areas. Administratively, rural areas are associated either with a large urban area (which functions as the prime sponsor) or the State government (which includes rural areas in a category called "balance of State"). This administrative arrangement has greatly reduced rural leaders' control over the design and administration of their public-service employment programs. And, this administrative arrangement may result in inequitable funding if urban sponsors or State governments fail to allocate all funds intended for rural areas. The program cannot be tailored to meet rural conditions because rural areas are treated in a residual manner.

Most rural counties have a local employment security office within the county or in an adjacent county. Yet, some indigent families must commute a considerable distance to obtain employment services, especially in the most sparsely populated areas. Services provided by local employment security offices vary considerably by place of residence. Rural offices usually have relatively small staffs who concentrate efforts primarily on processing unemployment insurance claims. And, some outlying areas may be serviced through periodic visits by employment security staff rather than by a resident full-time staff. Such situations make it difficult for rural employment security offices to provide screening, training, counseling, and job placement services "equal" to those in more densely settled areas.

CONCLUDING COMMENTS

We have addressed only the question of horizontal equity as it relates to where people live. No consideration was given to trade-offs between equity and preservation of work incentives, total program costs, administrative efficiency, fiscal relief, or other objectives for welfare reform. Nor have secondary and tertiary impacts of welfare reform been examined.

We conclude with the following points:

- (1) All persons concerned with the problems of rural areas—students of rural development—should pay attention to our income transfer system, for that system provides an important source of income for rural people. And public assistance is an important component of the transfer system.
- (2) The current national welfare system, particularly that component directed at the nonaged, does not favor rural areas because (a) most rural poor reside in areas with relatively low payments, and (b) the current system excludes conjugal families, who are relatively concentrated in rural areas. Thus, most broad-based welfare reform proposals increase benefits to rural areas and they are more equitable from our perspective.
- (3) Horizontal equity becomes harder to achieve as one moves away from cash programs for public assistance to job-type programs. Rural labor mar-

kets and local governments are not similar to those in most urban areas. Thus, it is unlikely that jobs programs designed for urban environments will work well in rural areas without considerable modification.

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FACTORS AFFECTING PARTICIPATION IN FEDERAL FOOD PROGRAMS

By Maurice MacDonald*

ABSTRACT

Legal entitlement versus participation is a key issue in evaluating food programs. Participation is a problem with the Food Stamp Program (FSP); only about half of all eligible recipients now receive food stamps. Rates themselves do not reveal the extent that nonrecipients who are eligible are truly needy.

A substantial proportion, approximately 30 percent of nonparticipating eligible persons, failed to obtain bonuses of \$500 or more per year. Assuming similar needs, elderly and nonpublic assistance or working poor households are much less likely to participate in the FSP, indicating stigma and/or access costs are important barriers to participation in the program. Outreach efforts might improve participation, and cash assistance or income tax credits might help in cases where stigma is a problem.

KEYWORDS: Federal food programs, Food Stamp Program, food stamp participation..

INTRODUCTION

The Food Stamp Program is essential. It serves a unique purpose in the welfare system; notably, it levels inequities among households. It is the only income assistance program for the working poor. Proper treatment of the vertical equity issue requires addressing four questions:

- Is there really a participation "problem" in the Food Stamp Program? ("Participation" is defined as the percentage of eligibles receiving stamps.)
- How does participation relate to the equitable distribution of benefits?
- What affects participation?
- How might we use our answers to improve the distribution of food aid?

Note that the vertical equity decisions made about resource eligibility limits are considered given in this article. I will concentrate on program performance with regard to assisting persons we have decided should get food aid. Legal entitlement versus participation is the issue. While my remarks apply to all food programs, I will consider specifically the Food Stamp Program.

PARTICIPATION AND EQUITY

The evidence suggests that there is not enough participation in the Food Stamp Program. The same can also be said about participation in other income transfer programs such as Supplemental Security Income (SSI), Disability Insurance, the Aid to Families with Dependent Children (AFDC) unemployed parent program, and Department of Labor programs such as the Work Incentive Program in AFDC.

Research has shown that if one compares fairly reliable estimates of the national total number of persons eligible for food stamps with the count of recipients, only about half of those eligible now receive food stamps (*I*).¹ Participation rates also vary widely, particularly in States where the rate is defined as the percentage of estimated eligibles who are getting food stamps. Except for the

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¹Italicized numbers in parentheses refer to items in References at the end of this article.

South, rural States are not reaching eligibles as well as urban States. For example, my home State of Wisconsin ranks among the bottom ten.

Although informed persons generally accept these findings as valid, the data can be criticized. Indeed, the rates themselves can be criticized for more than one reason. First of all, it is clear that participation rates are greatly underestimated because people move in and out of the program. Any count of recipients at a single point in time, which is what we usually use, neglects turnover in the recipient population. Most people who use these rates recognize that. But even accounting for turnover, one can claim that there is a sizable gap between recipients and eligibles in the Food Stamp Program; perhaps 35 percent of those eligible would be found not participating.

Whether this gap is serious or not relates to the second problem with participation rates. Rates themselves do not reveal the extent that nonrecipients who are eligible are truly needy. It is to be expected that some eligibles who are entitled only to small benefits would not take the time and/or the trouble necessary to obtain them. Thus, the finding that certain areas have low participation rates might be explained by a concentration of less needy eligibles in those areas.

To investigate this hypothesis scientifically, I used data from a reliable representative national sample of households—the Panel Study of Income Dynamics (4). People in this sample were asked whether they received stamps at any time during the entire preceding year. The data should, therefore, account for turnover. I selected a subset of people who are estimated to be eligible for the stamps. From these, I selected the eligible nonparticipants and estimated the amount of bonus stamps that these eligible but nonparticipating persons would have obtained had they participated. There are enough income and some asset data and other kinds of data on the household to do this reasonably well. As expected, 40 percent of the eligible nonparticipants would have obtained \$100 a year or less in bonus stamps. These are the near-poor people, the people for whom it might not be worth the trouble to enroll in the program. But more importantly, about 30 percent would have obtained about \$300 a year or more in food stamp benefits. And an astounding 15 percent of all eligible nonparticipants chose to give up \$500 or more a year in bonus stamps. These estimates suggest to me that nonparticipation is indeed a serious problem in some cases.

The Food Stamp Program is the only income maintenance program available to intact working-poor households. To be eligible, these people must have a household income so low as to practically prevent the purchase of a nutritionally adequate diet. Clearly, it is inequitable that many very poor persons who are eligible receive food stamps while some others do not. Especially is this true if the reasons for this inequity stem from how the program is structured or administered. The equity issue is more of a problem if there are courses of action we can take to mitigate this problem and we do not.

FACTORS AFFECTING PARTICIPATION

What does affect participation? After some general statements, I will describe some more specific research I did on the causes of nonparticipation (3).

Consider now the existence of a quasi-market for obtaining food stamps. The supply side is determined by the Government, which sets both the out-of-pocket and other costs of obtaining the stamps. The demand side consists of eligible persons who weigh the benefits of the stamps against their costs. In this market, the number of participants on how many eligible persons calculate that stamp benefits exceed costs. In short, a fairly straightforward individual cost/benefit decision is made. However, before applying such a model, it is important to recognize a serious problem affecting the demand side—some eligible persons simply may not be informed about the program. Another way to put this is that the information costs that they would have to bear prohibit their knowing about it.

Outreach activities and related regulations are intended to consider, in part, the possibility that people do not know about the program. Until recently and largely as a result of lawsuits, USDA tended not to publicize the Food Stamp Program. More recently, the information component of outreach has been an important activity in some States. Assuming that enough information is available, potential recipients then know whether it is worth applying for the stamps or not. When they do they learn about the face value of the stamps and whether or not they are eligible.

Besides obtaining information, the other costs of participating include the extent to which the program constrains the household to buy more food than it might otherwise freely choose to. These costs are probably relatively small, based on evidence that recipients are not too greatly constrained by the program (3). But they are important to keep in mind, because they also relate to the in-kind nature of the stamps and, therefore, another cost, stigma.

Stigma can be defined as the psychic cost of identifying oneself as dependent on the largesse of others. This happens when people use stamps in public places. Many people are concerned about the fact that the stamps are particularly identifiable compared with other kinds of public benefits which might be obtained. Another category of costs can be called access costs. These include the time and trouble it takes to obtain stamps.

To make all this more concrete, to help summarize what we know about the relative importance of various influences, I will report the results of another study I did using the Panel Study of Income Dynamics. Again, I isolated a subset of households who appeared to be eligible for the program based on their income, household size, and existing asset information. People who have worked with trying to estimate eligibility for these and other programs know that this procedure can be tricky. Nevertheless, I came up with a method which seemed reasonable for identifying eligible persons. The character-

istics of their households were used to predict which would participate in the program and which would not. The methods used included multiple discriminate analysis and multiple regression.

The purpose of the research was to discover the characteristics that distinguished participants from nonparticipants and, therefore, to infer reasons for nonparticipation based on characteristics that explain participation. Estimated bonus amounts and an income needs ratio (a poverty threshold ratio), the amount of savings, and recent unemployment experience were all used to indicate household needs. As expected, participation is much more likely among households with the most to gain by participating. That is, there is a relationship between need and participation.

However, the main purpose of the need indicators in my model was to isolate the effects of characteristics related to differentials in stigma and access costs. I wanted to identify factors that might be related to stigma and access, holding needs constant. Region, city size, and urban-rural location variables were also included as access cost variables. Among other independent variables were responses to questions about access to potential sources of information. For example, union and church membership as well as educational level were all included. And these, of course, were included to indicate differences in abilities to get and understand relevant information. These information indicators were found to have little explanatory power. I conclude that they are rather poor measures of information costs as opposed to the other potential conclusion that information is not important. Still, remaining predictors of participation did lead me to conclude that both stigma and/or access costs do matter.

With these data, though, it is difficult to discern the relative importance of these two barriers to participation. For example, households headed by persons 65 years or older were less likely to participate, which demonstrates, of course, that participation is a problem among the elderly, holding their potential benefits constant. However, the question remains as to whether the elderly are less mobile (an access problem) or whether perhaps more traditional attitudes on their part toward welfare and toward receiving assistance of various types prevent participation. That is, these people consider receiving assistance a stigma. Developing cost effective outreach for the elderly would require an answer to this question. For example, expanding programs such as meals on wheels could be wasteful if stigma is the problem. Unfortunately, I do not have the answer to that question yet.

There is less ambiguity, I believe, about another main finding. Again, holding needs constant, intact, prime-age male-headed households in the labor force who reported no welfare income during the 5 years prior to the survey were much less likely to participate than were the public assistance households. The evidence is fairly solid that the working poor or nonpublic assistance households participate only when their need is extreme, such as during the most recent recession. I think that this finding is primarily

true because of stigma. It seems the working poor have at least as good an access to such programs as do public assistance households. Yet, the public assistance households participate much more, relatively.

From the standpoint of preserving the work ethic, some people may argue that this stigma is fine. But it is important to remember that these working poor households contain children and that the program was intended to help them, as well as earners. Clearly, preservation of the work ethic can be carried too far. In fact, assuming cash assistance or work-related benefits are less stigmatizing than food stamps or in-kind benefits, this evidence alone provides strength for the argument of a complete cash out of food stamps for nonpublic assistance households. That is, if one believes that it is the stigma aspect of food stamps that prevents this particularly important group from participating in the program, then one can argue that we should provide benefits to them in another way.

Probably the greatest shortcoming of the analysis that produced this finding is that it reveals very little about the supply side of this market for food stamps. Clearly, State and local administrators can and do influence the extent to which food stamp transactions are conducted with convenience and dignity for their recipients. As an aside, race of the household head did not appear to affect participation in my models. Evidently our food aid system, at least with regard to food stamps, is fairly color blind.

To study the effects of administrative practices, we could find race and other factors making a difference. To learn if this is so in a reliable way, though, we need another approach. One cannot just look at individual household data as I did. One way is to try to explain local county participation rates based on county variables.

Recently I have been experimenting with that kind of study. Donald Lerman and I have produced some evidence suggesting county administration does substantially influence participation in Wisconsin (2). We used county variables such as the farm proportion of population; population density; unemployment rates; size of the AFDC and SSI caseloads; county per capita income; and variables such as the hours that food stamp sales offices are open, and outreach activities such as meals on wheels.

We found that counties whose public officers are primarily Republican tend to have lower participation rates. I do not mean to dun the Republicans. I was curious about whether such variables would be significant, and, in this case, it appears that they are.

This finding has an important implication, or at least highlights an area we ought to think about. Presumably, the percentage of Republican office holders indicates fiscal conservatism. This finding is no cause for alarm *if* the persons eligible for food stamps who do not get them share their elected officials' fiscal conservatism. Votes in the ballot box theoretically ought to get voters what they want in terms of elected officials. But if eligible persons are not getting public officials whose views they share, it could be that some local power structures are resisting

promotion of food aid for low-income constituents, food aid that is readily available to similarly situated persons in other types of counties. And, of course, this behavior would certainly be inequitable.

CORRECTING EXISTING INEQUITIES: A SUMMARY

The last question posed is how to right the inequities that do exist. To summarize, a substantial proportion of eligible persons, approximately 30 percent, who did not participate in the Food Stamp Program, failed to obtain sizable bonuses, of \$500 or more per year. And this finding shows inequity, given that other very poor eligibles do use the stamps. Further, holding needs constant, elderly and nonpublic assistance or working poor households are much less likely to participate in the program, which suggests stigma and/or access costs are important barriers. Whether or not members of a needy household participate also depends partly on where they reside—another horizontal inequity. Midwestern and Mountain States have low participation rates, as do many rural areas in other States.

Now let me state some policy conclusions. First, States must adopt a more aggressive outreach posture to increase participation in areas where local administrations may be the cause of low participation. Second, USDA has a responsibility to bring States with low participation rates into line with the rest of the Nation. Third, if stigma is an important barrier, cash assistance or earned income tax credits may be more effective than food stamps in assisting the working poor.

At the same time, however, there are legitimate arguments for preserving stamps for other eligible persons. One reason we have a Food Stamp Program now is that some taxpayers presumably are more willing to pay for aid that is tied to food rather than cash. To the extent that taxpayers can be pleased and people reached who need the aid, that may be fine. So, one can think of cashing out part of the food stamp program, not all of it. Finally (and you might expect this from an academic) more research on participation is needed. I find it hard

to get information about participation in other food programs. Possibly even more important is research to determine the effectiveness of various outreach methods that do exist now. If people take this participation problem more seriously, we are likely to spend more money on outreach, and the danger exists that we will do it haphazardly and waste many Federal tax dollars.

The possibility is real that we are failing to feed persons we have the will and way to help. Even those who believe otherwise should be willing to pay to prove that they are right and, therefore, put the rest of us at ease. There is controversy over whether participation is a problem. I do not like the fact that the controversy exists. We should do more research and settle the question once and for all. After all, we have had food stamps nearly 15 years. Isn't it time we ended speculation, informed or otherwise, that the program is less than fully effective?

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FOOD PROGRAMS, FARM POLICY, AND THE FOOD SYSTEM

By K. L. Robinson*

ABSTRACT

While it has become fashionable to argue for subordination of farm policy goals to "nutrition policies", the recent Food and Agricultural Act of 1977 was not designed around nutritional considerations. Factors on the supply side continue to heavily influence the cost of food and the diets of consumers. Therefore, food policy analysts would be remiss if they confined their research to possible changes on the demand side. Examples such as meat import restrictions and price support for grains show how factors which dictate dietary changes are often on the supply side of food policy.

KEYWORDS: Farm policy, food policy, nutrition policy.

INTRODUCTION

Two premises underlie my comments in this article. First, the principal role of a policy-oriented research organization, such as the one sponsoring this series of seminars, is to provide information for policymakers which will enable them to predict more accurately the consequences of adopting a particular policy or program. Second, research priorities in this area should be based on a preliminary assessment of the relative impact of proposed policy changes on farm incomes, food costs, and nutrition.

A research agenda obviously must be closely linked to a policy agenda. I share Howard Hjort's views that USDA analysts should "respond to, rather than create," the policy agenda. Thus, one requirement is to forecast what items are likely to appear on such an agenda and, more specifically, to identify alternatives that are politically viable. Since policymaking in the United States is largely a process of marginal incrementalism, one can immediately compress the research agenda and limit the analysis to a relatively small number of alternatives.

FOOD POLICY VERSUS FARM POLICY

It is now fashionable to argue that the United States needs a new food policy and that farm policy choices in the future should be subordinated to food policy considerations. In the past, it is clear that food

policies, insofar as we have had what might be termed "food policies", have been largely a byproduct of farm policies designed to increase demand or to support the prices of specific commodities. Assistant Secretary of Agriculture Carol Tucker Foreman is among those who have talked about the need to forge a new food policy and she has argued that nutrition should be its primary goal (3). Secretary Bergland also has expressed the view that nutrition considerations should determine food and farm policies rather than the reverse. It is not clear, however, that members of the U.S. Senate and however, that members of the U.S. Senate and House agricultural committees share these same views.



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the Congress demonstrated that it is not yet ready to abandon traditional support policies nor to subordinate the interests of producers to those of consumers. Farm and food policies obviously are going to coexist. The best we can hope for is a modest degree of integration, or at least some marginal changes in existing agricultural policies which would make them less inconsistent with the goal of improved nutrition.

The concept of an integrated food and agricultural policy is, of course, not a new idea. John D. Black promoted this concept more than 30 years ago. Professor Black knew of the need to alter consumption patterns to improve nutrition but he argued that the way to do this was to choose policy consumption and production. In a book entitled *Future Food and Agriculture Policy* which he wrote with Maxine Kiefer, he set forth a combination of policies designed to bring about what he called "consumption adjustments" along with corresponding changes in production and land use (1). While the policies he advocated are not necessarily appropriate today, his concept of "fitting together" food and agricultural policies and thinking in terms of simultaneous adjustments in both consumption and production is worth reviving.

CURRENT FOOD POLICY ISSUES

While food policy issues clearly have moved up on the policy agenda, most of the programs or policy instruments that can be expected to significantly affect the cost of food and the availability of nutrients over the next 4 or 5 years still fall within the scope of traditional farm policies. These include price supports, storage or reserve policies, marketing orders, and import restrictions. I will return to this theme later, but first, I want to present a list of issues which are likely to remain on the food policy agenda over the next few years. This list is based on a review of issues raised by food activists, speeches by Assistant Secretary Foreman, and comments made by participants at two food policy conferences held recently in New York:

1. Domestic food subsidy programs—
 - Cashing out food stamps
 - Changing the mix of foods approved for school feeding programs
 - Expanding the Women, Infants and Children (WIC) program
2. Organizing, administering, and funding nutrition education programs (mainly through schools and Federal-State Extension Service)
3. Restricting food advertising or providing funds for "advertising" to promote good nutrition
4. Regulating the use of additives (such as nitrates)
5. Nutrient labeling
6. Drained-weight labeling
7. Changing grade standards (for example, for ice cream and deboned meat).

Some people will object to the absence of dietary goals in the foregoing list. They clearly represent a controversial issue, but they do not, in my view, constitute an item which is likely to appear on the legislative agenda. The congressional committee responsible for the recent report on dietary goals had no legislative responsibility and, in fact, it has now been reorganized out of existence. Further, its report states specifically that it is not intended that the goals set forth serve as a basis for legislative action (5). They are intended mainly as a guide for individuals. The proposed dietary goals will have policy implications only insofar as those in the Congress or those who are administrators use the goals, for example, in mandating the content of nutrition education programs or in deciding what commodities are to be excluded or included in school feeding programs.

Another issue which might be added to the list is the structure and control of agriculture. This is not strictly a food policy issue, but I am surprised at how much concern consumers express about what they view as the takeover of agriculture by large-scale agribusiness firms. I come from the Northeastern quadrant of the United States where most of the agricultural output is still produced by family owned and controlled farms, although much larger ones than before, and where farmer-controlled cooperatives supply a large percentage of inputs and market a substantial proportion of the milk, eggs, fruits and vegetables produced in the region. Thus, I find these consumer fears somewhat exaggerated.

Nevertheless, these concerns do exist. Consumer activists associate the demise of the small firms and the rise of large-scale agribusiness concerns with a decline in competition; exploitation of labor, and possibly, consumers as well; overuse of chemicals; and deterioration in the quality of food. I am not sure who should be doing research to find out what effects changes in structure could have on food costs and nutrition, but these issues should be addressed somewhere in the research establishment.

DOMESTIC FOOD PROGRAMS

Most of the food policy instructions now being discussed by food activists and policymakers turn out, on close examination, to be relatively weak instruments for altering demand or consumption. Domestic food subsidy programs are an important exception. These are the only programs with sufficient funding to have a significant effect on the total demand for food. The primary effects (at retail) induced by most of the remaining policy instruments are likely to be small; hence, the secondary effects (on producers) also will be relatively minor, especially compared with other factors; such as longrun changes in demand induced by market forces and modifications in support policies or conditions affecting supply. The principal impact of changes in food policy through such instruments will fall on food processors and marketing firms rather than on producers.

Changes in food subsidy programs offer the most scope for altering the demand for food, at least in the short run. Dropping the cash purchase requirements for food stamps, as mandated in the Food and Agriculture Act of 1977, probably will result in a slight decrease in the aggregate demand for food. Once this change is fully implemented, however, taking the next step and eliminating food stamps entirely, or simply "cashing out" food stamps (which is the shorthand way of designating this change) will not produce much additional impact. The excellent paper by Boehm and Nelson presented at the second seminar in this series makes this clear. Even if one modified their assumptions regarding participation rates and the income elasticity of demand for food among participants, the conclusion would remain the same. Namely, the effect of cashing out food stamps and substituting cash grants under a reformed welfare system would not lead to a significant change in demand from the level likely to prevail once the cash purchase requirement is eliminated. Any further analysis would simply alter the numbers well to the right of the decimal point, which means in this case, changes in total food demand amounting to no more than a fraction of 1 percent.

Changes in school feeding programs, apart from modest changes in the level of funding, could alter the composition of Type A lunches or restrict the use of particular commodities, such as eggs. Further analysis of these proposed changes would be appropriate and useful, since a number of producer groups, especially poultrymen, are concerned, perhaps unduly so, about the impact of such changes. Some rough calculations I have made indicate that restricting the use of eggs in schools might produce a one-time change in the demand for eggs by, at most, 1 or 2 percent. Furthermore, even if total demand changed as much as 2 percent, this would not necessarily have a lasting effect on the profitability of egg production. This conclusion, of course, depends on flexibility on the supply side.

CHANGING DEMAND AND PRODUCER RETURNS

The impact of changes in demand on producer returns is a subject which needs more research. There is a strong tendency among producers to equate profitability with rising demand. They tend to overvalue demand expansion programs, including advertising, and they probably exaggerate the adverse effects of modifications in policies that might lead to a decrease in demand. Profitability is closely linked to the rapidity with which producers can adjust to changes in demand (or costs). By examining in detail how different sectors of agriculture have responded to past changes in demand and input costs, one might be able to dispel the view that rising demand is sufficient or even necessary to insure profitability.

In an attempt to explore this relationship, admittedly in a very crude and preliminary way, I have

looked at changes over the past decade in the relationship between product and input prices for two commodities: first, eggs, for which demand clearly has been declining; and second, turkeys, for which demand probably has been rising, at least modestly. Product/feed price ratios may not accurately reflect profitability, but they are easily calculated and can serve as a proxy to indicate relative if not absolute profitability.

Between 1968-71 and 1973-76, feed costs rose 85 to 90 percent for both egg and turkey producers; during the same interval per capita egg consumption declined 9 percent while turkey consumption rose 8 percent: Profitability, as measured by the product/feed price ratio for both turkeys and eggs, declined, but by approximately the same order of magnitude despite divergent trends in demand. Thus changes in feed costs (influenced mainly by changes in farm rather than food policies) may affect profits in the livestock sector much more than do changes in demand, whether induced by changes in Government programs or by market forces.

EDUCATION AND ADVERTISING

I do not know how one can obtain reasonable estimates of the potential impact on producers of expanding nutrition education programs, either through schools or USDA's Science and Education Administration Extension staff. One reason is that we know relatively little about influencing food consumption behavior as distinct from providing nutrition information. Surveys indicate that most consumers know in general what foods are good for them, and which should be avoided, but that knowledge of good nutrition is not translated into appropriate action. The traditional approach to teaching nutrition, which emphasizes selecting foods from each of the major food groups, obviously has not succeeded in countering the effects of affluence, the desire for convenience foods, the ingenuity of food manufacturers, and advertising. Without more knowledge about motivation and the psychology of food consumption, and perhaps some re-education of nutritionists, it is unlikely that even substantial increases in the amount of money allocated to nutrition education will lead to major changes in consumer behavior.

I have similar reservations regarding our ability to predict the consequences of proposed restrictions on advertising fabricated foods such as sweetened cereal or soft drinks. We simply do not know how to derive the coefficients to put into our models. Advertising designed to offset the effects of Saturday morning TV programs for children is another issue. It would be very helpful to the Congress and to Administrators if we could provide information on the probable effectiveness of such programs. Yet the likelihood of our being able to do so with any degree of precision seems so remote that I would tend to put research in this area well down on the priority scale.

The U.S. Department of Agriculture, of course, does not have jurisdiction over many of the programs or policies which I have included in my list of food policy issues. Decisions relating to the control of advertising, ingredient labeling, and additives fall within the jurisdiction of other agencies, such as the Federal Trade Commission and the Food and Drug Administration. It is an open question just how much research done by one Government agency influences the decisions of another. But some of the issues are sufficiently important to the food industry, and, to a lesser degree, to farmers, that it would be appropriate to have some factual analysis at hand. If for no other reason, it could avoid possible overreaction by producers or the food industry to proposed changes in regulation or labeling.

INGREDIENT LABELING

One of the emerging issues is to what degree current nutrient labeling requirements serve to enhance the image of fortified or fabricated foods at the expense of "natural foods". Foods with additives generally will show a higher percentage of RDA's supplied by one serving than will those without. If compelled to provide nutritional advertising on TV, food manufacturers can use the same information to convey the impression that fabricated foods are superior nutritionally to natural foods. This ability raises the question of what type of information should be placed on the label (or presented to consumer in advertising). Would offering consumers information, for example, on the percentage of sugar, saturated fat and salt in the product, or the number of milligrams of cholesterol rather than the percentage of RDA's for such items as thiamine, riboflavin, niacin, and iron affect buying habits? If so, how would changes in labeling requirements influence the demand for fabricated foods compared with that for natural products? Food manufacturers and processors, for obvious reasons, are keenly interested in this issue.

It is not clear just what effect changes in labeling requirements might have on agriculture. Alternative approaches to labeling and product identification are of sufficient interest to warrant investigation, although it will not be easy to answer the questions now being raised.

DRAINED-WEIGHT LABELING

One can speculate about the effects of drained-weight labeling, but more facts on this issue would be welcome. While I strongly support the concept of providing consumers with complete and accurate information about the food they buy, I would not expect shifting the basis for labeling from actual weight to drained weight would significantly affect either the quantity of food purchased or consumed. The technical

problems involved in shifting to drained-weight labeling for all products are not easily solved. These will present serious difficulties for persons processing and packaging food; hence, middlemen may be adversely affected in the short run. Quoted prices for items such as meat also might end up being somewhat higher, which could add marginally to the food component of the Consumer Price Index.

But the total quantity of food packaged is not likely to change simply because the price is quoted on a slightly different basis, nor are aggregate food expenditures likely to change. This lack of change is likely because the increase in the quoted price presumably will be offset by a decrease in labeled weight when a significant difference exists between the total product weight as now reported and the drained weight. This conclusion is based on the assumption that consumers will continue to get about what they pay for—perhaps with a little less water added.

ALTERNATIVE NUTRIENT SOURCES

Policymakers also would like to know how consumers and producers will be affected if food manufacturers are permitted to substitute alternative sources of nutrients as long as they fulfill nutrient standards, regardless of the source (as is done with ingredients for animal feeds). Food manufacturers want the option of substituting casein and whey for nonfat milk and whole milk, and vegetable oil for butterfat in products like ice cream and cheese. It is now possible to make equivalent products in terms of nutrition, taste, and texture with a wide range of ingredients, especially since food technologists have succeeded in isolating and manufacturing compounds that give food flavor and fragrance. Enlarging substitution possibilities obviously would offer gains to some commodities at the expense of others. High-priced dairy products are among the probable losers.

MECHANICAL DEBONING

Considerable research already has been done on the possible effect on the meat industry of permitting the sale of beef and pork that is mechanically deboned. A higher recovery rate from carcasses may mean buyers would pay slightly higher prices for slaughter animals. On the other hand, an increase in supply, which could amount to as much as a billion pounds, or around 2 percent of total consumption, would have a slightly depressing effect on retail prices, thereby shifting the derived demand curve for animals at the slaughtering plant back to the left. It would not require a very complicated model to ascertain whether the potential gains from increased efficiency in recovery would be sufficient to outweigh the price effects from increased total supplies of meat.

FOOD POLICY IMPLICATIONS OF POSSIBLE CHANGES IN FARM POLICIES

If we confine policy analysis to the issues I have listed as "food policies", we will miss some of the more important policy variables affecting food availability, cost, and even human nutrition. For many commodities, policy changes which affect supply, most of which fall within the traditional farm policy area, are likely to have a greater impact on food availability and cost over the next few years than those which affect demand, such as changes in food subsidy programs or expenditures on nutrition education.

Changes in meat import restrictions or price support levels for grains, for example, are likely to have a substantially greater impact on total meat consumption than any of the suggested modifications in food policies that I have mentioned. Changes in meat consumption are dictated mainly by actions on the supply side since, for most livestock products other than dairy products, per capita use is determined largely by per capita production. One of the most effective ways of reducing meat consumption in the United States (if we were to adopt this as a policy objective) would be to raise the price of grain. Between 1972/73 and 1974/75, per capita consumption of grain-fed beef and pork declined dramatically. This change was not the result of nutrition education or campaigns to eat less meat, but simply a byproduct of altered price relationships which made it unprofitable to feed livestock. Over this interval, total use of grain by livestock was cut approximately 27 percent.

Changes in sugar policies, similarly, can have important effects on consumers. The recent action taken by the Congress in mandating a minimum support price of 13.5 cents per pound for raw sugar has forced the administration to impose a tax on imported sugar which will increase its cost to consumers by 3 to 4 cents per pound. The annual cost of this change in policy is between \$3 and \$4 per capita, which is equivalent in its total impact on households to raising the price of wheat by more than \$1 per bushel.

These effects on commodities raise the issue of to what degree traditional farm policy instruments should be employed in an attempt to achieve dietary goals. Price policies obviously are not very effective as instruments to alter consumption for commodities with inelastic demand, such as sugar and tobacco. However, for commodities with more elastic demands, such as fruits, vegetables and meat, price relationships might conceivably be altered in an attempt to induce changes in consumption that would be consistent with nutritional objectives.

Marketing orders are another instrument of farm policy with important nutritional and cost implications for consumers. Such orders apply mainly to milk and a limited number of fruits and vegetables. They have come under attack recently by economists

employed by the Federal Trade Commission and by a number of academicians. In a paper presented at the December 1975 meeting of the American Agricultural Economics Association, Professor H.S. Houthakker implied there was a causal relationship between marketing orders and a deterioration in the average U.S. diet as indicated by a decline in the proportion of the population with acceptable levels of intake of calcium, vitamin A, and ascorbin acid between 1955 and 1965. He pointed out that the principal sources of these nutrients are milk, fruits and vegetables which are precisely the commodities that have come under marketing orders (4).

Houthakker's hypotheses deserve additional investigation, but I doubt that a strong case can be made against fruit and vegetable orders. Such orders cover only a small part of vegetable and noncitrus fruit production. Moreover, they have proved to be relatively weak instruments for controlling production or raising prices because of the wide range of substitutions possible between commodities subject to orders and those which are not, and to substitutions possible between controlled and uncontrolled regions of the country. In general, fruits and vegetables for processing are not eligible for inclusion under marketing orders. Recent trends in production of citrus fruit and tomatoes also are inconsistent with the Houthakker hypothesis that marketing orders have adversely affected nutrition. Per capita availability of vitamin C, for example, has increased substantially over the past decade mainly because of increased production of these two commodities.¹

The case against milk marketing orders is more substantial, but most analyses that I have seen ignore the nutritional consequences of having induced excess production of milk by overpricing at the margin under Federal milk marketing orders. This is not the time nor place to argue the merits or demerits of Federal milk marketing orders, but they clearly represent an issue that should appear somewhere on the research agenda of any organization concerned with food policy issues.

CONCLUSIONS

My principal conclusion is that food policy analysts would be remiss if they confined their studies to possible changes on the demand side. What food will cost and what consumers will eat probably will be influenced more by changes in farm policies, at least over the next 4 or 5 years, than by changes in food policies. Without too much exaggeration, one can characterize food policies as involving instruments whose principal influence is on demand, while farm policies consist mainly of instruments which influence the availability and

¹ USDA reports that the average amount of ascorbic acid available for consumption per capita per day increased 11 percent between 1967 and 1977, among the highest of all nutrient increases during this 10 year period (2).

cost of raw products. The changes in food policies which are now being actively considered will have a modest influence on aggregate demand for food, mainly through changes in subsidized consumption programs. Most of the other proposed changes will affect middlemen and the way in which food is processed, packaged, labeled and possibly advertised, but they will have relatively little impact on farmers. More important changes affecting both food costs and nutrition are likely to occur on the supply side.

I hope the research agenda can be broadened to include an analysis of the consumer cost and nutritional impact of changes in farm policies as well as the effects of changes in food subsidy programs, various forms of regulation, restrictions on advertising, and increased funding for nutritional education on the entire food system. By broadening the agenda, one might make a modest contribution towards the integration of farm, food and nutrition policies.

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ECONOMIC EFFECTS OF THE FOOD STAMP PROGRAM

By Paul E. Nelson and John Perrin*

ABSTRACT

Economic effects of the Food Stamp Program (FSP) on the Nation's economy and the economy of Texas are reported. Estimates of the FSP's impact on business receipts and gross product were made using two input-output models. The authors estimate that the Nation's economy gained \$2.3 billion in business receipts in Fiscal Year 1976 which it would not have gained without an increase in final demand equivalent to the \$5.3 billion in bonus food stamps. The impact will vary between States. The purchase requirement exerts a real influence on the impact of the program.

KEYWORDS: Food Stamp Program, input-output, business receipts.

INTRODUCTION

When the cost of a Federally sponsored program passes a billion dollars a year, people begin to take notice. By the time it exceeds \$5 billion a year, it is highly visible. In fiscal year 1976, food bonus stamps alone amounted to \$5.3 billion. Media headlines have attested to the program's visibility. Commentators have asked who is gaining and who is losing. Some pundits continue to ask if the magnitude and character of economic impacts will remain the same once food bonus stamps are issued without a stamp purchase requirement.

To suggest some possible answers to these questions, we will:

- Report net changes in business receipts flowing toward or away from specified sectors because of bonus stamp expenditures made during fiscal year 1976;¹
- Contrast these findings with those of a simulation in which the same amount of bonus stamps were

issued but without a stamp purchase requirement;

- Compare program impacts on the Nation's economy with those on the Texas economy under alternative tax funding treatments;²
- Treat supply flexibility nationally in order to consider the possibility of an output illusion

THE MODELS

Two input-output models developed independently were chosen to identify the program's impact upon business receipts and gross product. The input-output methodology was selected because it allows changes in final demand to be reflected fully throughout an entire economy as sectors interact with one another.

The models were partially closed by placing the food stamp and nonfood stamp household sectors along with the industry sectors in the endogenous portion of the transactions matrix. This partial closing enabled the results to include the induced as well as the indirect impacts resulting from the stimulus to final demand by the bonus transfers.

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¹ Because of changes in the household sector's consumption functions associated with this, or any income transfer type program, some sectors will gain while others will lose.

² The first treatment used for the Nation's economy and the first comparison for Texas increased taxes of the nonparticipant household sector just enough to fund the value of the bonus stamps distributed within each of these economies (4). Italicized numbers in parentheses refer to items in References at the end of this article.

Details of these independently developed and adjusted input-output models are presented in (2 and 3). However, it is relevant here to note that, unless otherwise indicated 55 percent of the value of the bonus stamps were assumed to have gone for food items and 45 percent for nonfood items.³ Import adjustments, of course, were

made. Imports consisted of any purchases which originated beyond the boundaries of the economy under study; for example, beyond Texas' boundaries for Texas. In addition, the basic consumption function for Texas food stamp households was derived from regional data (12, 14) and for the total U.S. economy from corresponding national data (13, 15).

³ The food-nonfood distribution was based upon (6) and discussions of unpublished data upon which (6) was based. Technically, even though each food stamp issued is spent upon food, there is the possibility of substitution of nonfood for food purchases if before participation the household spent a higher proportion of its net income for food than the rules for participation require.

FINDINGS

1976 PROGRAM WITH PURCHASE REQUIREMENTS, UNITED STATES

Table 1 shows that the Food Stamp Program in fiscal year 1976 issued \$5.3 billion in bonus food stamps. The

Table 1.—Changes in U.S. business receipts and gross national product with income transfer from taxpayers to food stamp households in fiscal year 1976: column A—purchase requirement to obtain bonus stamps, column B—bonus stamps received without purchase requirement¹

Changes in business receipts by industry sector ²			Change in gross national product (GNP)		
	A	B		A	B
	Thousand dollars			Thousand dollars	
Agriculture, forestry, and fisheries . . .	+796,772	+244,815	Participant household sector:		
Mining	-16,552	+13,164	Bonus stamps received	5,313,000	5,313,000
Construction	-10,548	+16,334	Plus income from new jobs.	20,998	31,854
Manufacturing:			Minus increase in savings		
Food manufacturing —			and taxes	148,439	415,485
Meat and poultry products	+562,342	+82,219			
Dairy products	+200,503	+4,929	Equals change in consumption		
Grain mill products.	+174,832	+30,442	expenditures	5,185,559	4,929,983
Bakery products	+115,520	+492			
Canned and preserved foods . . .	+336,051	+70,073	Nonparticipant household		
Other foods and beverages	+191,370	-118,733	sector:		
Total	+1,580,618	+72,422	Income received from new		
Nonfood manufacturing	-551,894	-195,026	jobs	548,268	189,683
Total manufacturing	+1,028,724	-122,604	Plus decrease in savings		
Local and suburban transportation. .	-6,876	+17,713	and taxes	417,235	499,824
All other transportation	-10,813	-55,530	Minus tax to fund bonus		
Communications	-30,344	+13,879	stamps	5,313,000	5,313,000
Gas, electric, water and					
sanitary utilities	-1,246	+197,706	Equals change in consumption		
Wholesale trade	+486,811	-100,989	expenditures	-4,347,497	-4,623,493
Retail trade	+901,443	+315,713			
Finance, insurance, and real			Sum of change in consumption		
estate	-414,884	+147,716	expenditures equals GNP	838,062	306,490
Personal services	+89,493	-62,442			
Physicians and dentists	-71,425	+880			
Hospitals and laboratory services . .	-29,380	+111,987			
Education (private)	-46,940	-30,586			
Other sectors ³	-153,251	-163,351			
Total change in business receipts .	+2,331,998	+544,405			

¹ The nonparticipant household sector was taxed \$5.313 billion to fund bonus stamps. The expenditure of bonus stamps was treated as an increase in final demand of this amount. Meeting this increase in final demand required additional economic activity. This increased economic activity resulted in a contribution to gross national product of \$838.062 million for fiscal year 1976, when households which participated had to buy stamps to participate. The simulation for the ending of the requirement to purchase stamps yielded a corresponding figure of \$306.490 million. ² As a result of the injection of bonus stamps, the final demand for the products and services of some sectors rose more than it would have risen without the program. Agriculture, forestry and fisheries, for example, received \$796.772 million more in business receipts (output) than without the program. For other sectors, output was less than it would have been without the program. Mining, for instance, would have received \$16,552 million more in business receipts without the program. ³ Other sectors is an aggregate composed of direct and transferred imports; business travel and gifts; office supplies; Federal, State, and local government enterprises; and other services.

Nation's economy gained \$2.3 billion in business receipts which it would not have gained without the program or an equivalent increase in final demand. It also gained \$838.1 million more in Gross National Product (GNP). While in absolute dollars this increase in business receipts is substantial, the base value is so large that the percentage change is quite small. The increase in business receipts equaled 0.2 percent.

As anticipated, agriculture, forestry and fisheries; food manufacturing; and the retail trade sectors gained while other sectors lost; that is, had lower business receipts (output)—than if there had not been a program. Agriculture, forestry and fisheries gained \$796.8 million (1.3 percent); food manufacturing; \$1.6 billion (1.6 percent); and retail trade, \$901 million (0.9 percent). Of the food manufacturing sectors, meat and poultry products and canned and preserved foods gained most. The former's business receipts gained \$562.3 million (2.5 percent), the latter's, \$336.1 million (3.6 percent).

Sectors which lost the most were nonfood manufacturing, \$551.9 million (0.1 percent); and finance, insurance and real estate, \$414.9 million (0.3 percent). Losses are largely explained by two factors: (1) the drop in expenditures associated with the tax increase levied upon the non-participant household sector to fund bonus stamps and (2) the purchase requirement for the food sectors which shifted food stamps purchases toward food sectors more than if there had been no such requirement. However, as shown above, total gains exceeded total losses by \$2.3 billion.

PROGRAM WITHOUT PURCHASE REQUIREMENT, UNITED STATES

The simulation used to ascertain the economic impact of the Food Stamp Program with the same amount of bonus stamps but without a purchase requirement showed that business receipts would increase \$544.4 million (less than 0.1 percent). The contribution to GNP was \$306.5 million. Most of the same sectors which gained when there was a purchase requirement constraint also gained the most without it. Agriculture, forestry and fisheries gained \$244.8 million (0.4 percent); food manufacturing, \$72.4 million (0.1 percent); and retail trade sectors, \$315.7 million (0.3 percent). However, other foods and beverages, and the wholesale trade sectors both lost instead of gaining. They lost primarily because the decline in purchases from them made by the nonparticipant household sector exceeded the increases in purchases from them made by the participant household sector.⁴

⁴ Under the tax increase to fund bonus stamps, the nonparticipant household sector bought \$219.9 million less from the other foods and beverages sector and \$252.9 million less from the wholesale trade sector. Simultaneously, the participant household sector increased its purchases from the other foods and beverages sector by only \$144.4 million. The comparative size of the decrease in purchases by the nonparticipant household sector explains most of the shift, which resulted in a net decline in business receipts for the two sectors.

Sectors which lost most were nonfood manufacturing, \$195.0 million (less than 0.1 percent), and personal services, \$62.4 million (0.4 percent). Sectors which now gained instead of losing included finance, insurance and real estate, \$147.7 million (0.3 percent); physicians and dentists, \$0.8 million (less than 0.1 percent); hospitals and laboratories, \$112 million (0.7 percent); mining and construction, respectively, \$13.1 million (0.1 percent) and \$16.3 million (less than 0.1 percent). Here, losses were primarily associated with decreased purchases by the non-food stamp household sector. There was no purchase requirement.

IMPACT UNDER FULL TAX FUNDING, TEXAS

Table 2 presents results for both full and proportionate tax funding.⁵ Column A reports impacts for the former and Column B for the latter.

Under full tax funding, Texas' business receipts increased \$32.4 million (less than 0.1 percent), but gross State product declined \$73.5 million. Agriculture, forestry and fisheries gained \$23.7 million more than without the program (0.4 percent). Other sectors gaining were food manufacturing, \$45.2 million (0.7 percent); food wholesaling, \$15.2 million (1.3 percent); food retailing, \$33.6 million (2.2 percent); and hospitals and laboratories, \$1.6 million (0.2 percent). For the food manufacturing sector, the meat and poultry, and dairy products components gained most, respectively, \$20.7 (1.1 percent) and \$10.9 million (2.8 percent).

Sectors which lost extensively included nonfood manufacturing, \$8.9 million (less than 0.1 percent); eating and drinking places, \$8.4 million (0.5 percent); other retail, \$23.2 million (0.4 percent); physicians and dentists, \$4.8 million (0.4 percent); and other services, \$18.7 million (0.2 percent).

These gains and losses, while similar to the national impact pattern, differ in important ways. For example, at the national level, business receipts rose 43.9 cents for every dollar of bonus stamps spent. In Texas the corresponding figure amounted to 10.2 cents. Gross national product declined 7.2 cents for each dollar of bonus expenditures. In addition, some sectors which gained nationally did not gain in Texas and some which lost nationally did not lose in Texas. Thus, nationally, the other foods and beverages sector gained while in Texas this sector lost. Conversely, the hospitals and laboratory services sector lost nationally while this sector in Texas gained.

Factors which largely explain these differences in impact upon the two economies involved (1) differences in import leakages, (2) variations in the household sectors' consumption functions, (3) shifts in functions due to the tax increase to fund bonus stamps and (4) the magnitude of the tax increase. Space and time do not permit elaboration of these points. Suffice it to say that the results for

⁵ Refer to footnote 2.

Table 2.—Texas model, fiscal year 1976; column A—full \$298.7 million taken in taxes to fund stamps; column b—Texas proportional share of total Federal taxes applied to total value of U.S. bonus stamps¹

Change in business receipts by sector					
	A	B		A	B
	Thousand dollars			Thousand dollars	
Agriculture, forestry and fisheries	+23.702	+25.863	Hospitals and laboratories.....	+1.635	+2.825
Mining	-1.157	+1.138	Other services.....	-18.732	-13.078
Construction	-.804	-.073	Total change in business receipts	+32.356	+92.463
Manufacturing:			Change in household income and gross State product		
Food manufacturing—				Full tax	Adjusted tax
Meat and poultry products ...	+20.657	+22.146	Participant household sector:		
Dairy products	+10.933	+11.370	Bonus stamps received	+298,700	+298,700
Grain mill products	+6.108	+6.288	PLUS increase from new jobs	+1,087	+1,163
Bakery products	+4.610	+5.009	Minus increase from savings and taxes. .	+25,953	+25,960
Canned and preserved foods ..	+3.227	+3.534			
Other foods and beverages....	-.340	+.959	Equals change in consumption		
Total	+45.195	+49.306	expenditures.....	+273,834	+273,903
Nonfood manufacturing	-8.934	-3.057	Nonparticipant household sector:		
Total manufacturing.....	+36.261	+46.249	Income from new jobs	-77,852	-45,189
Local and suburban			Plus decrease in savings and taxes	+29,193	+53,345
transportation	+.859	+.959	Minus tax increase to fund bonus stamps	+298,700	+266,984
All other transportation	-4.482	-2.224			
Communications.....	+.008	+.911	Equals change in consumption		
Gas, electric, water and			expenditures.....	-347,359	-258,828
sanitary utilities	+.773	+3.220			
Wholesale trade:			Change in combined consumption		
Food	+15.198	+16.066	expenditures (gross State product)	-73,525	+15,075
All other	-10.926	-7.345			
Total wholesale	+4.272	+8.721			
Retail trade:					
Food stores	+33.589	+35.770			
Eating and drinking places	-8.400	-6.332			
All other retail	-23.173	-7.833			
Total retail	+2.016	+21.605			
Finance, insurance and real					
estate	-8.111	-.970			
Personal services	+.941	+1.657			
Physicians and dentists	-4.825	-3.340			

¹ The nonparticipant household's consumption function was adjusted prior to the distribution of bonus stamps to the food stamp household sector by increasing taxes. Under column A the amount of tax equaled \$298.7 million and under column B, \$266.984 million. For the mechanics of adjustment of each of the nonparticipant household sector's cells, see (4, p. 8). Note: Italicized number in parentheses refers to item in References at the end of this article.

fiscal year 1976 are consistent with those for fiscal year 1974 reported elsewhere (4).

IMPACT UNDER PROPORTIONATE TAX FUNDING, TEXAS

With this smaller tax increment to fund bonus stamps, Texas business receipts grew \$92.5 million (0.1 percent) and gross State product, \$15.1 million. All sectors either gained more or lost less than under full tax funding. Agriculture, forestry and fisheries gained \$25.9 million (0.5 percent); food manufacturing grew \$49.3 million (0.8 percent). Additional sectors with large gains were gas, electricity, water and sanitary utilities, \$3.2 million (0.1 percent); wholesale food, \$16.1 million (1.3 percent); and retail food, \$35.8 million (2.4 percent).

In contrast, sectors which experienced large losses were nonfood manufacturing, \$3.1 million (less than 0.1 percent); all other wholesale, \$7.3 million (0.2 percent); all other retail, \$7.8 million (0.3 percent); and other services, \$13.1 million (0.2 percent)

SUPPLY FLEXIBILITY AND THE POSSIBILITY OF AN OUTPUT ILLUSION

Any input-output comparison assumes that increases in final demand are real and, consequently, output called forth to meet the increase also is real. The question here is whether the increases in final demand and output reported for fiscal year 1976 were real or inflationary or more real than inflationary. Evidence is mixed. Table 3

Table 3.—Specified sectors for city wage earners and clerical workers,
consumer price index

(1967=100)

Year	All items	Food	Durable commodities	Services, less rent
1970	116.3	114.9	111.8	123.7
1971	121.3	118.4	116.5	130.8
1972	125.3	123.5	118.9	135.9
1973	133.1	141.4	121.9	141.8
1974	147.7	161.7	130.6	156.0
1975	161.2	175.4	145.5	171.9
1976	170.5	180.8	154.3	186.8

(5, pp. 241, 243.)

Note: Italicized number in parentheses refers to item in References at the end of this article.

presents the consumer price index for durable and non-durable sectors and the food component of the nondurable sector. The overall impression is one of price inflation and the implication that the increase in final demand was not completely real. However, data presented in table 4 for manufacturing, and additional data for the agricultural crop and livestock sectors make this appear to be a strange kind of inflation. For food, there is no evidence that excess dollars have stimulated producers to increase output up to the point where existing capacity was overutilized. Manufacturing capacity not only was underutilized, but at a level perceptibly lower than that preferred by manufacturers.

For farmers, their 352 million harvested acres in 1949 were an all-time high⁶ (10). If this high is treated as full capacity, the acres harvested in 1976 equaled 94.6 percent of full capacity (11). This measure is crude, but in one sense conservative. Since 1949, tractor horsepower has increased, which would enable the same manpower to plant even more acreage than in 1949 without the same strain on manpower resources. Also, yields for many major crops have increased (given corresponding weather conditions) so that the same harvested acres today would yield more

⁶ Between 1964 and 1969, total land in farms declined 4.1 percent (10, p. 420).

Table 4.—Manufacturers' capacity utilization rates: Operation and ratios
of operating to preferred rates

Year	Operation rates			Ratios of operating/preferred rates		
	All manu- facturing	Non- durable	Food	All manu- facturing	Non- durable	Food
	<i>Percent</i>					
1966	86.0	85.5	79.0	0.94	0.94	0.90
1967	84.0	84.5	79.5	.94	.94	.90
1968	84.8	85.8	81.5	.94	.94	.91
1969	84.5	85.8	82.3	.94	.94	.92
1970	80.9	83.3	81.5	.95	.94	.92
1971	80.3	83.3	80.5	.95	.94	.92
1972	83.0	84.5	80.5	.95	.94	.91
1973	85.5	86.0	80.5	.95	.94	.91
1974	82.5	83.8	79.8	.87	.89	.86
1975	77.0	78.8	77.3	.81	.84	.85
1976	81.5*	81.7	77.3*	.85*	.88*	.86*

(7, p. 47; 8, p. 10; 9, p. 28).

*First three quarters.

Note: Italicized numbers in parentheses refer to items in References at the end of this article.

product. Taken together, the 94.6-percent figure thus implies we were closer to full capacity in 1949 than we actually may have been in 1976.

Livestock production hit an historic peak in 1973. In terms of units of livestock (animal equivalent basis), the agricultural sector produced at 95.7 percent of capacity (1).

Thus, conflicting sets of data confront us. The capacity figures suggest no food price increase may be attributed to too many dollars chasing too few food items because the food growing and processing sectors were operating at full capacity or even beyond in terms of overutilization. Yet the price indexes, including food, suggest the increase in final demand was not entirely real.

Each conclusion may be partially correct. We believe that increases in the final demand for food generated by the expenditures of food bonus stamps were more real than illusory and that the final demand increase occurred under conditions of production and processing which should have stimulated few, if any, increased in food prices. There were no extreme shortages of food supplies.

CONCLUSIONS

The data resulting from the input-output comparisons suggest:

- The expenditures of bonus food stamps in fiscal year 1976 did increase the economy's real business receipts and gross national product.
- The impact at the State level will vary by State. Some States will particularly benefit if they have low import leakages; if their contribution to total Federal taxes is such that the proportion going to bonus stamp funding is less than the proportion of total bonus stamps which they actually received.
- A food stamp program which requires participating households to buy some stamps to receive bonus stamps will exert a substantially different impact upon the economy than one which has no such requirement. With a purchase requirement, the gross dollar business receipts received by the agricultural, food processing, and merchandising sectors will be greater in absolute dollars than for a program with no such requirement. However, measured in terms of changes in the size of the business receipts, the change, relative to the bases, is less than 5 percent in all cases. The rise in total business receipts of the entire economy and the contribution to gross product also would be greater with a purchase requirement.
- In view of the farm and food processing sectors' level of operation, overall increases in food prices cannot apparently be attributed to an increase in final demand generated because food stamp ex-

penditures forced these sectors to produce at full utilization or overutilization at this time.

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COMMODITY DISTRIBUTION PROGRAMS AND THE SUPPORT OF FARM INCOME

By William T. Boehm, Thomas A. Stucker, Anthony Gallo, and Mike Belongia*

ABSTRACT

Commodity distribution programs were originally designed to help support farm income. Public purchase of commodities had resulted in accumulation of stocks which have been used to help feed needy people. The theoretical influence of a government purchase program for a commodity is illustrated and the types of government commodity purchases under various legislative sections are discussed. The most important legal authorizations for commodity distribution are Section 32 of the amendments made in 1935 to the Agricultural Adjustment Act of 1933, Section 416 of the Agricultural Act of 1949, and Section 6 of the National School Lunch Act of 1946.

KEYWORDS: Commodity distribution, farm income support, surplus commodities.

Commodity distribution programs have been operated by the U.S. Department of Agriculture since 1935. Those operated today have grown largely from the early programs designed to help support farm income. It is generally recognized that when both supply and demand are relatively inelastic, as is true with most farm commodities, small movements in quantities offered for sale can result in rather wide fluctuations in the price level. And in years when production is "greater than normal" that farm prices can fall to levels well below the cost of production without "support".

When public programs were designed to support farm incomes through the public purchase of commodities, questions arose as to the disposition of the accumulated products. It seemed reasonable then (and still does) to distribute such an "agricultural abundance" to those without adequate resources to make such purchases through regular market channels. Clearly this solution is more acceptable than one of the alternatives—destruction of the purchased commodity.

Questions still exist, however, as to whether such purchase and distribution programs do, in fact, influence farm incomes in total and over the long run. To our knowledge, very few attempts have been made to develop answers to these questions. This fact should, at a minimum, serve as a warning that finding answers will not be easy.

This article is not an attempt to provide definitive answers. Rather, we present a framework for research on

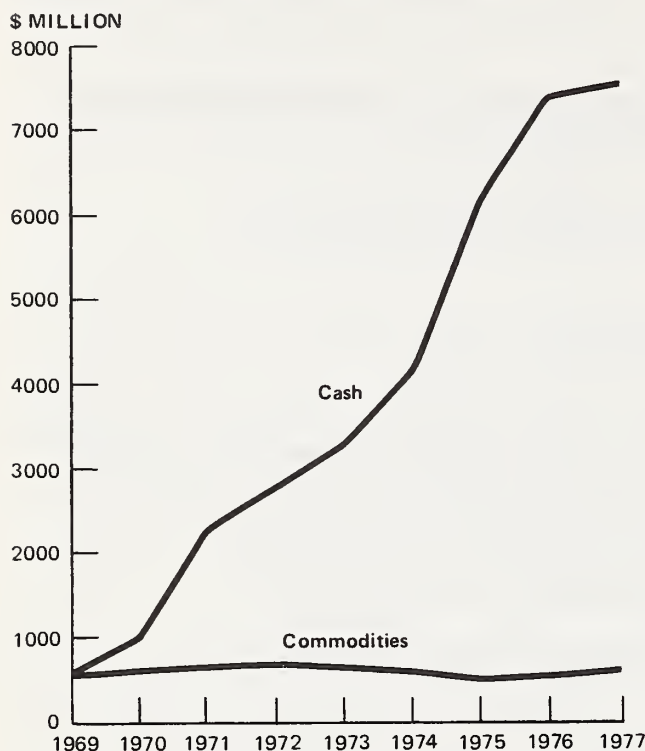
this issue and we put the problem itself into perspective by reviewing the major legislative statements in effect today authorizing Government commodity purchase and distribution programs. After a review of the research evidence available on the topic, we conclude with what we believe are the major points to be researched.

BACKGROUND

Public programs designed to improve the economic positions of farmers are as old as the Nation. Events of the recent past, largely associated with the American Agricultural Movement, remind us all that the economic viability of farms remains a social issue. Programs which authorize the public purchase and distribution of U.S. agricultural commodities to needy persons, however, only date back to 1935. Important for a time as the only real public food relief, commodity distribution programs today account for less than 10 percent of all Federal public food aid (fig. 1). Further, 90 percent of the commodities distributed are used in the child nutrition programs—primarily National School Lunch. But, even in that program, the value of commodities distributed is only about

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FIGURE 1
PUBLIC FOOD AID EXPENDITURES, 1969-77



20 percent of the total Federal support (table 1). All other public domestic food assistance, including the Food Stamp Program, is via resource transfers which provide reimbursement for the purchase of foods through regular market channels. It is likely, therefore, that, in the aggregate,

farm incomes today are more influenced by the market-effected food purchases which result from cash (and coupon) assistance than by the Government purchase and distribution of physical commodities. However, purchase and distribution programs may well have important income influences in particular markets at particular points in time.

While the relative importance of commodity distribution as a tool to support farm income has not increased substantially over time, several legal authorizations for its continued use exist. The most important (in terms of value distributed) are Section 32 of the amendments made in 1935 to the Agricultural Adjustment Act of 1933, Section 416 of the Agricultural Act of 1949, and Section 6 of the National School Lunch Act of 1946. Together, these three authorizations account for almost all of the commodities distributed in 1977 (table 2).

The stated purpose of Section 32 is to provide market outlets for surplus agricultural commodities by encouraging exports and domestic consumption among low-income groups. In addition, production payments, programs to find new uses for agricultural commodities, and several other programs are also authorized under the act of 1933. In recent years, though, these have been inactive. Between 1936 and 1976, roughly 85 percent of Section 32 funds (about \$6 billion) have gone to domestic purchase and donation programs. Only about 7 percent have gone to export programs, and these have not been active in recent years.

Under the Section 32 purchase and donation program, USDA purchases surplus, nonbasic, perishable commodities at the wholesale level through public bidding procedures. Program rules largely determine what food items are "surplus, nonbasic and perishable." The "surplus" determination is made by the Secretary of Agriculture prior to acquisition. If the market price for an agricultural

Table 1.—Appropriations for domestic food programs, 1977 and 1978

Program	1977	1978, current estimate
<i>Million dollars</i>		
Child nutrition	586	591
Food donations	27	31
Elderly feeding	27	35
Institutions	22	24
Total, commodities	622	671
Cash and other	7,942	8,556
Total	8,604	9,227
<i>Percent</i>		
Commodities as a percentage of total	8.3	7.2
Commodities as a percentage of child nutrition	22.0	20.4

Source: Food and Nutrition Service.

Table 2.—Value of foods distributed, by enabling legislation, 1966-77

Year	Section 32		Section 416		Section 6		Total
	Mil. dol.	Pct.	Mil. dol.	Pct.	Mil. dol.	Pct.	
1966	143	44	124	41	58	18	325
1967	114	38	132	43	58	19	304
1968	150	35	217	51	56	13	423
1969	251	48	206	39	64	13	522
1970	361	63	151	26	64	11	577
1971	339	54	221	35	64	10	624
1972	279	43	308	47	64	10	652
1973	219	40	263	49	59	11	542
1974	247	45	234	43	67	12	548
1975	267	52	162	33	64	15	494
1976	214	49	147	34	71	16	433
1977 ¹	—	—	16 ²	3	467 ³	89	522 ⁴

¹ Preliminary.

² Includes funds from Section 4a of the Agricultural and Consumer Protection Act of 1973.

³ Includes transfer of purchase authority of \$401 million from Sections 32 and 416.

⁴ Includes \$39 million from Section 707 of the Older Americans Act of 1965 and Section 4a of the Agricultural and Consumer Protection Act of 1973.

commodity is less than 100 percent of parity, it may be classified as "surplus."¹ All nonbasic commodities are therefore potentially eligible. Examples of the types of commodities most frequently purchased include apple and frozen orange juice concentrate, frozen turkeys, frozen cut-up chicken, canned fruits and vegetables, frozen ground beef and canned beef, and potatoes (dehydrated and frozen fried). In 1975, meat and poultry accounted for almost three-fourths of the \$267 million worth of products distributed under this authorization.

Section 32 purchases are financed by a continuing appropriation drawn from 30 percent of the import duties imposed on all U.S. imports. Authorization for an additional \$500 million annually is also provided for under the Agricultural Act of 1956. In 1976, \$215 million worth of commodities were distributed to schools, needy persons, and institutions under Section 32 authorization—86 percent to schools.

Section 416 of the Agricultural Act of 1949 authorizes USDA's Commodity Credit Corporation (CCC) to donate commodities to the Bureau of Indian Affairs, school feeding programs, and needy persons. In 1976, \$147 million in CCC commodities were distributed under Section 416. About 86 percent of these commodities (value basis) went to schools.

"Domestic donations" account for between one-third and one-fourth of total CCC dispositions. Domestic sales, and sales for export and foreign donations account for the bulk of total CCC dispositions. Generally, the proceeds from such sales have exceeded the costs of acquisition. In recent years, almost all CCC donations under Section 416 have gone to domestic outlets. Prior to 1967,

most CCC Section 416 donations went to foreign non-profit voluntary agencies. Since then, authorizations for foreign donations have been transferred to Title II, Public Law 480. In addition to those distributed under Section 416 of the Agricultural Act of 1949, some CCC inventories have been distributed to domestic commodity distribution programs under sections of various other acts.

Items distributed under Section 416 are "basic"—products whose prices are supported by USDA commodity programs. Therefore, meats, poultry products, and canned fruits and vegetables are not eligible. Dairy products, though, account for a major portion of the commodities distributed under Section 416—85 percent in 1975. Fats and oils, rice, peanuts, wheat, and other grains make up a significant part of the remainder.

Generally, States are permitted as many Section 416 commodities as they can use without waste. However, with CCC inventories down in 1974 and 1975, States were given a pro rata share as delineated in Section 32. On January 18, 1978, Assistant Secretary Foreman announced that increased quantities of rice, flour, and other grain products, and dairy and peanut products are again available for use.

Major commodity distributions are also made under Section 6 of the National School Lunch Act of 1946. Through the mid-seventies, these distributions accounted for about \$60-\$70 million of the food distributed to schools and between 10 and 20 percent of all donated foods.

In contrast to distributions under Sections 32 and 416, Section 6 commodities need not be from CCC stocks or on the "real surplus" list. A "high protein" orientation is, however, mandated for commodities purchased under this section. In 1975, 80 percent of the commodity funds spent under Section 6 authorization were allocated

¹ This conclusion is based on a September 1967 General Council Opinion (#150).

to beef and poultry. All perishable, nonbasic commodities are now purchased under Section 6.

The Department is authorized to substitute limited cash in lieu of commodities when not enough commodities are available for distribution. At least 75 percent of the mandated per-lunch entitlement under Section 6(e) of the National School Lunch Act must be in the form of commodities, 25 percent may be in cash, when foods are not available. Section 6(e) requires that the Secretary allocate a total value of cash or commodities for each school lunch served (12.75 cents in fiscal year 1978).

COMMODITY DISTRIBUTION AND THE SUPPORT OF FARM INCOME

USDA commodity purchase and distribution programs as authorized by the various legislative authorities discussed above potentially influence the gross income of agricultural producers by expanding the markets for those products. Graphically, the *theoretical* influence of a Government purchase program for any one commodity may be shown as in figure 2.

There are two demand components for the commodity—a private demand and a public sector demand. These demand curves, when horizontally summed, represent the aggregate demand for the commodity in question. The *public sector* demand has three distinct features:

(a) A price along the vertical axis (P_3) above which none of the commodity would be purchased. In all but

very unusual cases, this price will be substantially below the price at which none of the product would be purchased in the private sector market.

(b) A normal, downward-sloping section, at which, as price falls below (P_3), more of the commodity will be purchased.

(c) A perfectly elastic portion indicating the price (P_1) at which the Government stands ready as the residual buyer to purchase all that is not removed from the market by private sector demand at this price.

Thus, given such an aggregate demand schedule, Government purchases of the commodity will be largely determined by what is offered for sale. The extent of Government influence on market-clearing price will be determined by what we shall call the “zone of intersection.” For example, if q_1 is offered for sale, the Government has no influence on market clearing price. If q_2 is offered for sale, Government influence is equal to $P_2 - P_1$. In certain cases, when the intersection is in zone C, Government influence on market-clearing price could be total—the market would not clear at a positive price. Notice, however, that even in zone C, the available production is allocated between the public and private demand.

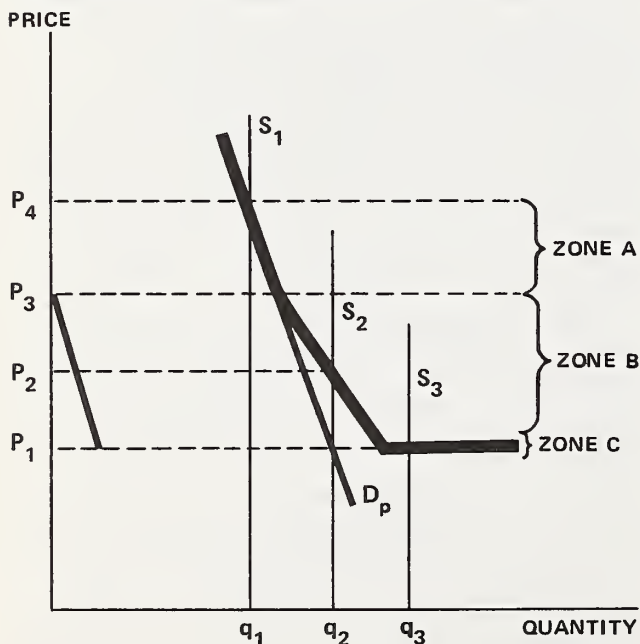
Figure 2 can be used to describe the types of Government commodity purchases under various legislative sections discussed earlier. Section 416 of the Agricultural Act of 1949 authorizes the distribution of CCC commodities. These “basic” commodities are supported by USDA commodity programs. In general, those products are purchased at the supported price (P_1); and, thus, the quantity offered for sale is in zone C.

Most Section 32 and probably all Section 6 purchases occur in zone B. That is, market price is below P_3 , but above P_1 . As market price increases from near P_1 toward P_3 , Government purchases would be expected to fall. In certain circumstances, Section 32 purchases would be made in zone C. If, in a local market for a perishable nonbasic product, the quantity offered is so large relative to what would be taken by the private market at less than “disastrous” prices, the Government could make purchases necessary to support the price at P_1 .

All Section 6 purchases would be expected to occur in zone B. These products, purchased for use in the child nutrition programs, are bought by the Government primarily for their nutritional content. Such products would thus represent the case of a public good which has a normal downward-sloping, price-sensitive demand.

Theoretically, the extent to which such commodity purchases help *increase* farm income (price times quantity) depends upon the zone of intersection. Other things being equal, purchase of commodities in zone C should contribute relatively more to the support of producers’ incomes than purchases made in zone B. Clearly, zone A is irrelevant here since the Government makes no purchases. The relative support of income must always be evaluated in terms of the market-clearing price expected with no Government purchases.

FIGURE 2
THEORETICAL INFLUENCE OF GOVERNMENT
PURCHASE PROGRAM ON ANY ONE COMMODITY



This framework may be useful for researchers who hope to identify the farm income support afforded via commodity distribution programs. Conceptually, at least, it would seem possible to identify (statistically estimate) the private sector and public sector demands for specified agricultural products and, with that information and the specified support price level, to develop an aggregate demand (fig. 2). Production and CCC purchases could then be related to determine the extent of the public sector influence.

PROBLEMS TO BE OVERCOME

Two serious problems exist regarding the potential use of relationships shown in figure 2 for research. First, the analysis is based upon the assumption that the two demand components—public and private—are unique. Secondly, the analysis assumes that the government purchases do not reappear as “supply” in subsequent periods.

UNIQUENESS OF DEMANDS

Uniqueness of demands is required to obtain the maximum demand expansion from a government purchase and distribution program. To the extent that recipients of the publicly distributed commodities substitute them for regular market purchases, the effectiveness of those purchases in increasing farm income is reduced. In recent research, we find, for example, that some substitutability likely exists (involving a shift in the time of consumption) between market purchases of fluid milk for consumption “at home” and the consumption of Government-subsidized milk through the child nutrition programs. The effect of such substitutability is to shift zones B and C back toward the private sector demand.

While the evidence on substitutability (or “slippage”) is clearly not all in, there is a strong rationale to suggest net gains in consumption (and thus, *ceteris paribus*, gains in farm income) as a result of the Government subsidized food programs. First, the distributions are targeted to groups with relatively few resources to make equivalent value market purchases. Second, the distribution programs tend to provide foods at times when access to market purchases is minimal. Finally, some of the food distributed, such as butter, would likely generate less of a private sector demand if the products were not distributed.

As can be calculated from table 2, 94 percent of the 1977 appropriated dollars for USDA commodity distribution were for the child nutrition programs, primarily National School Lunch. Preliminary estimates are that \$466.3 million in commodities were actually distributed for use in the School Lunch Program during that year.

In a 1950 study, Nelson concluded that positive support existed in Iowa for several farm products. That is, more was consumed than would have been the case without the school lunch program. However, Nelson also found that, while the programs appeared to provide both market support and nutritional supplement in the case of milk,

“the total daily calcium intake of the 9, 10, and 11-year old subsample was equivalent for both school and non-school lunch students” (2, p. 317).²

In that study, though, Nelson evaluated the *total intake*—regardless of whether the commodity was purchased with cash (milk, for example) or obtained via commodity distribution. Clearly, the degree to which commodity distribution programs actually operate to increase *total* consumption of agricultural products continues to be unresolved. It is an issue we intend to research.

TIME OF DISTRIBUTION

The other conceptual problem is related to the time dimension employed for product distribution. If USDA accumulates a product in one time period to support the product price at P_1 , market prices could be dampened by offers to sell the product when prices begin to rise above P_1 , in subsequent time periods. As has already been indicated, a fairly large percentage of all CCC purchases are resold for use in both domestic and foreign markets at prices above the CCC purchase price. The effect of such programs is, therefore, more likely to *stabilize* farm prices over time than to actually increase the cumulative revenue to farmers.

The severity of these two problems is heightened somewhat by the fact that raw agricultural products are biological and, therefore, highly perishable. To utilize domestic and foreign food distribution programs as partners in purchase programs designed to support farm income, it is usually necessary to purchase the processed (storable) counterparts of most raw agricultural products. The farm price of milk, for example, is supported through CCC purchases of butter, cheese, and nonfat dry milk (the largest in volume and value). While such a system (purchase for distribution) maximizes the humanitarian use aspects of commodity programs, it also tends to retard their potential for influencing real increases in farm income over time. When purchases exceed distributions, stocks and Government costs increase and so does the pressure for Government *sales*.

EFFECTS OF SECTION 6 DISTRIBUTION

A final point regarding the potential of commodity distribution programs to influence increases in farm income relates to the purchase and distribution of commodities as originally authorized under Section 6 of the National School Lunch Act: these purchases need not be basic (that is, price supported) or in “surplus.” Authorization for such purchases relates primarily to the increased distribution of foods to “improve the nutritional content of school lunches” (3, p. 74). Since 1960, between 10 and 20 percent of the value of all food distributed have been distributed under Section 6 authorization. Foods pur-

²Italicized numbers in parentheses refer to items in References at the end of this article.

chased under Section 6 have a high protein content and include such items as meats, poultry, and fruits and vegetables.

The argument is made that, since USDA is a large volume buyer and already has a distribution network (for Section 416 and Section 32), higher value meals can be served at lower cost per meal as a result of commodity distributions. USDA distribution of such commodities could possibly influence farm incomes if:

(a) The foods distributed do lower per meal costs and encourage additional consumption and/or

(b) Schools serve more "basic" meals as a result (foods with relatively high farm value).

The research evidence available on these two points is not definitive. It does seem clear, however, that particularly the smaller, more rural schools do benefit from lower per meal costs as a result of the USDA program. That is, without *commodity* distribution programs (Section 416, Section 32, and Section 6), the local purchase of the same foods would be more costly. In a report published in 1975 on comparative food costs, ERS (now part of ESCS), researchers concluded that, if the same tonnages had been purchased at the average prices paid by the various sized school systems, costs would have been higher. A critical factor, quality variation, was not measured in that study. "Costs for the largest schools were 0.3 percent higher than costs for USDA-supplied commodities. Those of the smallest schools were 18.4 percent higher. The average of all school systems was 7.2 percent higher" (5, p. 5). In contrast, however, Erickson reported in a study published in March 1977 that "there was no difference between a cash-in-lieu of commodities program and a Federally donated commodity program concerning the cost of producing Type A lunches at the school level in Oklahoma and Kansas" (1, p. 40). USDA's Food and Nutrition Service is conducting a study at this time in an attempt to resolve the apparently conflicting results.

CONCLUSIONS

This article provides no new information regarding the ultimate farm income influence exerted by the commodity distribution programs of USDA. That was not our purpose. Undoubtedly, some secondary data exists for use in addressing the question, but few attempts have been made to do so. We are committed to do more—indeed, there is a mandate in the National School Lunch and Child Nutrition Act of 1977 for USDA to look specifically at the farm income implications of the program of cash in lieu of commodities.

We have presented a rather simple conceptual framework for addressing the major issues. The major issue to be resolved is what we will choose to call "slippage"—a term relatively familiar to many who have worked in the area of farm policy analysis. Past questions about "slippage" have been raised in the context of programs designed to reduce agricultural production. Here, we relate the term to *consumption*. Whether or not farm incomes are increased as a result of commodity distribution programs fundamentally depends on whether or not such programs result in *net* increases in consumption at a specified or higher price level. This can only occur if:

(a) The markets for public and private consumption are relatively unique so that expansions in public demand do not come at the expense of sales through regular market channels. That is, total aggregate demand for the product must be increased, and

(b) The products purchased in one time period (to support price at a specified level) do not "re-appear" to influence the amount available for sale in subsequent periods (thus depressing the price).

Finally, commodity distribution programs are fairly unimportant relative to total domestic food aid. Likely, the farm income support generated by these programs far exceeds the positive influences generated as a result of commodity distribution per se.

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FOOD PROGRAMS AND THE RETAIL PRICE OF FOOD

By R. A. Schrimper*

ABSTRACT

A model is proposed for analyzing what is known about the effects of Federal food programs on the relative price of food at the retail level. Given the assumed elasticities, a 10-percent increase in food program participants' demand for food could result in a 0.08- to 4.0-percent increase in food prices.

KEYWORDS: Food programs, food prices, demand for food.

INTRODUCTION

The combination of words in the title assigned for this particular part of the seminar series implies that a linkage may exist between the existence of food programs and the retail price of food. In view of the Federal food programs expenditures, especially since 1970, and behavior of food prices in recent years, it is understandable how these developments might produce various hypotheses. For example, the Federal cost of USDA food pro-

grams for the 50 States and the District of Columbia increased nearly 250 percent between 1970 and 1976 (table 1). During this time, the retail price of food rose approximately 60 percent, as measured by the Bureau of Labor

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Table 1.—Federal cost of USDA food programs for 50 states and District of Columbia

Program	1970	1971	1972	1973	1974	1975	1976	1977 ¹
	<i>Million dollars</i>							
Bonus stamps	1,104	1,699	1,980	2,209	3,498	4,602	4,657	3,329
Child nutrition	462	776	947	1,097	1,381	1,684	2,010	1,529
Food distribution	543	609	539	453	478	408	489	433
Women, infants children (WIC)	—	—	—	—	33	106	182	207
Total	2,109	3,084	3,466	3,759	5,390	6,800	7,338	5,498

¹ Includes only first 9 months.

Source: (9, p. 10). Italicized numbers in parentheses refer to items in References at the end of this article.

Note: Dashes indicate program did not exist.

Statistics (BLS) (11, 12).¹ Given these gigantic increases, it is not surprising to wonder about a possible relationship between the two developments.

OBJECTIVES

The purpose of this article is to explore some evidence and thoughts concerning the implied relationship. I hope it will be clear from this article why specific estimates of the implied relationship are not readily available.

There are dangers in attempting to draw any inference about economic relationships from simple correlations or comparisons which may be spurious. To identify a possible relationship among economic phenomena, we must resort to some type of model to determine how variables may actually be interrelated. The type of model that might be employed to examine the relationship between food programs and the retail price of food, however, depends on one's perspective. For price analysts or consumption economists, it is natural to view the question in terms of the effects that possible expansions in demand for food have on equilibrium market prices. For economic historians or political scientists, it might seem equally natural to reverse the order of the relationship. That is, to ask the extent to which increases in the price of food over a longer period have been the impetus for the development and expansion of food programs as we observe them today. The latter view may not be unrealistic, in light of the built-in escalation clauses for expansion of benefits that have been incorporated into programs. Combining the two perspectives quickly gets us into problems of circularity as food prices and program benefits escalate. The cause and effect relationship is difficult to unravel.

To consider effects of changes in demand induced by the Federal food programs, I will present a conventional model for price analysis. Examining the various components of this model provides a framework for identifying what is and is not known about the effects of food programs on the relative retail price of food. This information will then be used to develop some crude estimates of potential price effects. Finally, I will look at some important qualifications underlying the framework and empirical estimates.

ANALYTICAL FRAMEWORK

Assuming one takes the perspective of a price analyst, it is natural to think initially about how much of an exogenous impact or net expansion in the demand for food has resulted from Federal food programs. Combining this information with estimates of the price responsiveness of demand and supply functions applicable for the length of run under consideration, one can determine how much net

demand expansion gets translated into price effects. The formula that represents the interrelationship of these elements assuming usual market-clearing price formulation is:

$$(1) \quad EP_r = (\eta - \epsilon)^{-1} EQ_r$$

where

- EP_r = percentage change in retail price of food
- EQ_r = percentage change in total retail demand for food induced by Government food programs
- η = price elasticity of retail supply of food
- ϵ = price elasticity of retail demand for food

ELASTICITY CONSIDERATIONS

The above formula illustrates that the price multiplier $(\eta - \epsilon)^{-1}$, for any change in the retail demand for food induced by Government food programs, is directly related to the respective price elasticities of supply and demand. From this perspective, food programs seem to be responsible for some increase in the retail price of food to the extent that they result in a net increase in total retail demand for food for a given supply function which is not perfectly elastic. The direction of the effect seems to be clear, but the magnitude is so uncertain that it raises doubt as to whether there is any effect at all. In particular, Nelson and Perrin (6) estimate that the quantity of bonus food stamps distributed in 1972 and 1974 contributed 0.03 percent to inflation based on results of an input-output analysis under conditions of a perfectly inelastic supply curve.

From the above formula, larger elasticities of demand or supply diminish the price effect of exogenous shifts in demand resulting from explicit Government programs to expand demand. It is also intuitively clear that the upper bound on the size of the price multiplier results when there is a perfectly inelastic supply. In such a situation, the price flexibility of aggregate retail food demand provides an estimate of the upper bound on the multiplier. Assuming the aggregate price elasticity of retail food demand is in the neighborhood of -0.2, which Blakely's analysis (1) of food prices of the early seventies tends to affirm, it is apparent the price multiplier is certainly less than 5. Furthermore, a -0.2 estimate for the price elasticity of demand implies the price multiplier is less than 1 for any value of the supply elasticity greater than 0.8.

I am not aware of any comparable study to Blakely's that enables an estimate of elasticity for the supply side to be pinpointed very precisely. Gardner's analysis (5), however, indicates how the price elasticity of supply of food at the retail level depends on the elasticity of substitution between marketing inputs and raw agricultural products plus the elasticity of supply for each of the factors. If the elasticity of substitution is assumed to be zero and the supply of marketing inputs is perfectly elastic, the price elasticity of supply at the retail level is simply a multiple of the price elasticity of supply at the farm level—for a

¹ Italicized numbers in parentheses refer to items in References at the end of this article.

closed economy. The factor of proportionality is determined by the retail price of food relative to the price at the farm level. Thus, the relevant elasticity could be substantially above alternative estimates that have been postulated for aggregate supply of food products at the farm level. Alternative competitive structures of the food processing and retailing sector could be incorporated into the analysis by varying the elasticity of supply of marketing inputs. It seems unlikely, however, that this sector could capture much economic rent from increases in the demand for food.

The above formula indicates that a given exogenous change in demand could result in differential price adjustments for alternative lengths of time since elasticities of demand as well as supply may vary with the length of the adjustment period. Consequently, any initial increase in price may be somewhat larger than the longrun equilibrium adjustment. Even for the shortest time periods, however, the supply of food for domestic consumers is not perfectly inelastic in view of how international trade flows respond to relative price changes.

CHANGES IN TOTAL DEMAND FOR FOOD

Having emphasized some considerations associated with the elasticity components of the above formula, it is appropriate to look at the remaining component; namely, the percentage shift in total retail demand (EQ_r) induced by food programs. Note that this component is clearly identified as a percentage change in retail demand and not retail food expenditures or Federal food program expenditures. Only for a perfectly elastic aggregate retail supply of food would the percentage change in retail food expenditures be a valid measure of the relative change in retail demand. Even more important is that the shift refers to what happens to total market demand and not just the demand for food by program participants.

Hence in evaluating this component, it is necessary to decide how programs may affect nonparticipants as well as participants. It is obvious that the quantity of food purchased by nonparticipants will decrease in response to any increase in price, but this effect is assumed to be reflected in the price elasticity of demand (ϵ). Depending on how Federal food programs are financed, it is possible that nonparticipants' demand may be decreased as a result of diminished purchasing power because they pay higher taxes to finance transfer payments to program recipients. This is essentially the type of assumption Nelson and Perrin (6) incorporate in their analysis.

To simplify my analysis, however, it is helpful to postpone public finance issues of food programs and assume that nonparticipants are affected only by any resulting price changes. With these assumptions, the percent-

age change in total retail food demand can be rewritten as follows:

$$(2) EQ_r = \lambda EB$$

where

λ = share of total food market accounted for by food program participants

EB = percentage increase in retail food demand of program participants

This decomposition of EQ_r identifies the two ways in which food programs might result in increased retail demand; that is, (1) increased program participation results in larger values of λ or (2) improved "efficiency" of Federal expenditures results in larger values of EB .

Participation Rates

Even though it may be conceptually advantageous to consider separately the two ways in which total retail demand could be affected, the components are not totally independent. For example, changes in eligibility rules for participation which are specifically designed to change λ may attract or eliminate participants whose marginal adjustments in demand for food may be different from previous participants, thereby affecting EB . Despite this shortcoming, the decomposition indicates that large changes in participants' demand for food could have rather insignificant effect on total retail demand for food if participants account for a small share of the total market.

It is tempting to use the share of total population participating in food programs as a first approximation of λ , but this measure is not totally adequate. One shortcoming involves double counting because of participation in more than one program; for example, children in food stamp households might also participate in child nutrition programs. Total participants including all children participating in child nutrition programs would lead to an exaggerated estimate of λ for additional reasons. One factor that is only a fractional share of children's total demand for food is represented through their participation in child nutrition programs. Aside from this factor, 25 million children simply would not account for the same share of the total food market as 25 million adults.

At this point, it is expedient to ignore the impact of child nutrition programs on λ since I will argue that the percentage increase in retail food demand of participants in this program is likely to be smaller than in some of the other programs. Concentrating on the levels of participation in Food Stamp and the Women, Infants and Children (WIC) programs in recent years indicates a value of λ probably less than 0.08. A reasonable lower bound on this parameter might be 0.04, considering the share of total food purchases accounted for by total food stamps (purchased plus bonus). With this range of values for λ ,

it would take an expansion of 12½ to 25 percent in participants' food demand to produce a 1-percent change in total retail demand for food.

Demand Expansion by Participants

One problem in considering reasonable values for EB is that various programs are likely to affect participants' total demand for food differently and, consequently, each program must be considered separately. For example, there is little reason to expect an incremental Federal dollar spent on child nutritional programs such as School Lunch, special milk, and so on, to have the same effect on demand for food relative to expenditures on programs aimed at other target groups. How much of a shift in demand for food is produced by these activities depends, of course, on the extent to which Federal dollars simply replace private expenditures that otherwise would be allocated to food in the absence of Federal programs. In other words, to what extent do Federal expenditures supplement or replace personal expenditures allocated to food? Some of the \$7.3 billion spent by the Federal Government for USDA food programs in 1976 undoubtedly replaced private expenditures for food.

It is widely accepted that in-kind transfers of food commodities do not increase consumption by the total amount of the transfer. Recipients of in-kind food transfers may find it advantageous to reduce food purchases to free up income that can be allocated to other goods and services. Purchase requirements of food stamp plans were initially designed to overcome some of the substitution effects associated with in-kind transfers. Setting purchase requirements at amounts that households normally spend on food in the absence of a program attempted to guarantee that a net increase in expenditures would be achieved by the issuance of food stamps that would be used to increase consumption over and above normal amounts.

Since all households of the same size with similar incomes and other characteristics do not spend identical amounts for food, any variation in purchase requirements would be expected to induce a different distribution of participation and net increase in demand. If a household viewed the appropriate purchase requirements as being too high, it obviously would choose not to participate in the program. On the other hand, households who had been spending more for food than the purchase requirement would find bonus stamps increasing their general purchasing power as well as increasing specific purchasing power for food.

The increase in general purchasing power would result from the net difference between what a household was spending for food in the absence of the program and the purchase requirement of the program. This difference or reduction in the household's private purchas-

ing power that must be allocated to food to participate in the program could be reallocated among all items (including food) in the household budget.

Thus, even if households were to use all food stamps received for food purchases, the net increase in food expenditures could be somewhat less than the amount of bonus stamps since some recipients would divert private purchasing power away from food. General lowering of purchase requirements would be expected to increase participation and simultaneously result in a general decrease in the effectiveness of bonus stamps in expanding the demand for food.

Elimination of all purchase requirements as scheduled for implementation later this year is equivalent to increasing general purchasing power of eligible households. The extent to which increases in general purchasing power are distributed to nonfood products would diminish the amount of increased demand for food products induced by Government programs.

Income Effects on Food Purchases

An important issue in assessing the effects of Government programs on expanding food demand is the income elasticity or marginal propensity for food among low-income households. Reese and others (7) note that there is some consensus that the marginal propensity for food expenditures is low, but findings from different studies vary moderately. Some differences can be attributed to whether food expenditures or value of food consumption including nonpurchased foods is used as a dependent variable.

Relatively low income elasticities for food are certainly consistent with conventional wisdom, but is this true for all levels of income? Egbert and Hiemstra (4) reported income elasticities for low-income households to be less than one-third of corresponding estimates for middle-income households. Do low-income households really allocate smaller proportions of increased purchasing power to food than middle-income households, as implied by these values? Estimated income elasticities for low-income households may be especially subject to downward bias for several reasons.

Certainly, measurement errors and transitory income components are likely to prevail at the lowest end of the income scale in cross-sectional analysis. Besides the customary difficulties of trying to sort out the effects of shortrun transitory deviations from more permanent concepts of income, a further difficulty encountered is determining the appropriate measure of income if households receive in-kind transfers, such as health benefits, rent subsidies, and direct food aid. The manner in which differences in household composition are handled analytically may also be especially important when considering obser-

variations from low-income households.² It is fortunate that complete income information from the latest BLS Consumer Expenditure Survey will not be available to researchers.

Specific Program Effects

In recent years, efforts have been made to determine the effectiveness of bonus stamps in increasing food expenditures. Reese, Feaster, and Perkins (7) estimated that bonus food stamps were between 50 and 65 percent effective in increasing food expenditures by participating households under the pre-1970 and more recent liberalized purchase requirements. They concluded that bonus stamps were approximately twice as effective as comparable cash income supplements in expanding food expenditures by low-income families. Analysis of preliminary data from the 1972-73 BLS Consumer Expenditure Diary Survey by the Congressional Budget Office (3) tends to support the above estimates. The latter study indicated that *on average* 57 percent of bonus stamp transfers were used for additional food purchases expenditures and 43 percent used for nonfood expenditures. These values were obtained by comparing average weekly food expenditures for households participating in the Food Stamp Program to those for households with the same average income who were not participating in it. The estimate for the latter group was obtained from a linear relationship based on what nonstamp households with less than \$9,000 income spent on food, according to the survey. The extent to which participating families would have had higher average food expenditures than nonparticipating families would result in a lower estimate of the effectiveness of bonus stamps on additional food purchases and a larger share of increased purchasing power for nonfood expenditures.

² Additional analysis of the 1965-66 Household Food Consumption Data used by Egbert and Hiemstra (4) suggests that differences in the proportion of households with children among income groups systematically affected *per capita* expenditures and reduced income elasticities somewhat for low-income households. Using per capita observations for adult-only households with annual incomes under \$4,000 resulted in 50 to 100 percent higher income elasticities than when per capita data for all households with incomes under \$4,000 were included. For the middle income group, there was no difference in income elasticities for *at-home food expenditures*, regardless of which types of households were included. When *away-from-home food expenditures* were included in the dependent variable, elasticities based on adult-only households were 20 to 30 percent higher than for the entire sample of middle-income observations. Despite the relatively large increase in elasticities for the low-income group when adult-only households were considered, the elasticities for the middle-income households were still larger than for the low-income group.

Although each of the previous two studies produced reasonably similar estimates, the coefficients are not directly applicable for evaluating net changes in food demand. What is required is an estimate of the change in demand rather than the proportion of bonus stamps used for increasing food purchases. Assuming all food stamps (purchased plus bonus amounts) represent total food purchases of participants, the study by Reese and others (7) indicates increases in food expenditures from 21 to 289 percent, depending on particular income levels and family size.³ The CBO study (3) indicates that food expenditures for participating families were a little over 50 percent larger than expenditures for nonparticipating households. On the other hand, an analysis based on data from Kern County, California, indicated a difference of only 14 percent in the average monthly value of food available to participating households compared with that to nonparticipants.⁴ The 14-percent difference equaled a little over 40 percent of the value of the bonus stamps received by the average participating household, which is reasonably close to the two estimates of the "efficiency" of the bonus stamps previously discussed.

I am not aware of comparable studies providing similar information about other types of food programs. This shortcoming may not be too serious, however, in assessing potential impact on total demand expansion from Federal programs, in view of the relative importance of the food stamps plan in recent years. Furthermore, the ways in which the other programs are likely to have affected total food demand parallel some of the effects considered above. For example, Federal financing of free and reduced price lunches and breakfast programs for children from low-income households resembles conceptually a reduction in purchase requirements for a food stamp plan insofar as net effects on food demand. These types of benefits free up some private household purchasing power which might otherwise have been allocated to food. Consequently, the increase in food expenditures is likely to be less than the change in Government expenditures, for programs of this type. Similarly, the extent to which some Federal expenditures for food programs are allocated to children regardless of their parents' financial status suggests the possibility of substantial substitution effects for demand expansion.

EMPIRICAL IMPLEMENTATION

Numerous uncertainties exist about values of the parameters involved in the formula presented earlier. Thus, it is impossible to propose a point estimate for the effects of food programs on the retail price of food. Values in table 2, however, indicate the percentage change in retail

³ Calculated from data on p. 20 of Reese (7).

⁴ Calculated from data on p. 36 of CBO study (3).

Table 2.—Percentage change in retail food price for each 10-percent increase in demand by program participants under alternative conditions

Alternative price elasticity of retail supply of food	Participants' share of food market	
	0.04	0.08
0	2.00	4.00
0.3	.80	1.60
0.8	.40	.80
1.5	.24	.47
3.0	.13	.25
5.0	.08	.17

Note: Calculations based on equation 1 with assumption that price elasticity of retail demand for food is -0.2.

food price for each 10-percent increase in demand by program participants under alternative assumptions about the price elasticity of retail supply of food and the share of the total food market accounted for by program participants. The values in the two columns of table 2 are proportionally related to each other. However, they are useful to represent bounds on price effects for each 10-percent increase in participants' food demand, given likely shares of the total food market attributable to participants in Federal food programs in recent years. These values indicate that each 10-percent increase in participants' demand for food might result in an 0.08 to 4.0-percent increase in food prices depending on the price elasticity of retail supply for food

The range in price changes in table 2 though considerable is reduced markedly when elasticity of supply is assumed to be 0.8 or larger. Consequently, even if participants' demand for food were increased 30 to 50 percent by Federal food programs, the net percentage increase in retail food price would be 0.24 to 4.0 percent for supply elasticities between 0.8 and 5.0. Seemingly, a relatively small fraction of the 60-percent increase in the retail price of food between 1970 and 1976 resulted from the expansion of Federal food programs during this period.

The model on which the above estimates are based is relevant for considering only relative price changes for a sector of an economy. Hence, it probably is more valid to compare the calculated values to the 7.8-percent increase between 1970 and 1976 in the real price of food at the retail level. Even in terms of real price changes, however, food programs would be required to produce relatively large increase in participants' food demand under relatively inelastic supply conditions to account for a very large share of the increase in the real price of food observed since 1970.

QUALIFICATIONS AND ADDITIONAL THOUGHTS

A crucial assumption underlying the estimates presented in table 2 is that nonparticipants' demand for food would be unaltered when all adjustments to price changes are assumed to be reflected through the price elasticity of total retail demand. The values in table 2 would need to be adjusted downward if the demand for food by nonparticipants were shifted to the left, thereby offsetting some of the demand expansion by participants. This issue quickly reintroduces the questions of how food programs are financed and what additional price effects need to be considered.

If food programs are assumed to operate simply as transfer payment programs by reducing purchasing power of higher income households, then all that is required to estimate the opportunities price effects is to see how large the net shift in total demand for food is after the relative adjustments for the different groups. Differences in the marginal propensity for food at varied income levels in conjunction with a transfer in general purchasing power from higher income households to low-income households would have some positive impact on the demand for food. The impact could be considerably less than implied by considering only the increased demand by low-income households. A very small decrease in demand for 92 to 96 percent of a market can offset a large part of a substantial increase in demand for 4 to 8 percent of a market.

An alternative view is that the absence of food programs would not affect taxes or demand for food by nonparticipants but simply result in a different mix of public goods and transfer payments, and/or smaller Federal deficit. It is difficult, and perhaps not even reasonable, to assert how Federal expenditures for a particular program

might affect the need to expand the money supply. Nevertheless, to the extent to which there is any connection, there would be some additional nominal price effects throughout the economy. These effects were total ignored by the above framework which concentrated only on relative or real price effects.

The focus on retail food prices here has been at an aggregative level insofar as product identification is concerned. This was deliberately done to facilitate the use of a relatively simple framework for analysis realizing that price adjustments for individual products would not necessarily be uniform. Tomek and Robinson (8), Reese (7), Clarkson (2), and Blakely (1) are among those who have noted that programs designed to increase demand for food result in different rates of change among various product groups since all foods do not have identical income elasticities. Furthermore, a change in the mixture of marketing services and quality of products may occur as a result of different income elasticities. Consequently, there are many reasons aside from demand considerations alone why an increase in the retail price of food resulting from food programs would not necessarily pervade the food sector.

Despite all of the qualifications, shortcomings, and uncertainty about appropriate parameter values, the relatively simple framework proposed for considering the linkage between Federal food programs and the retail price of food has, it is hoped, been a useful way of identifying and systematically thinking about some of the relevant issues. Evaluating existing evidence regarding the price implications of changes in food programs helps to endorse agendas for future research inquiries in this area.

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EVALUATION OF EFFECTIVENESS AND EFFICIENCY IN FOOD PROGRAMS

By Stephen J. Hiemstra*

ABSTRACT

In this article a framework for food program evaluation is described. This outline is further delineated into descriptions of specific approaches to evaluation and the techniques of these approaches. Finally, the author isolates instances where economists misuse or misinterpret the economic evaluation of food programs and suggests possible means of improving the scope and methodology of food program evaluation.

KEYWORDS: Domestic food programs, program performance, program analysis.

In looking at the process of program evaluation, I see the need to examine the various kinds of evaluation activity and clarify some elements of methodology that sometimes get overlooked. In addition, I want to assess some of the studies that have been conducted regarding the food programs. Finally, I will comment on the food versus farm policy debate that emanates from the studies.

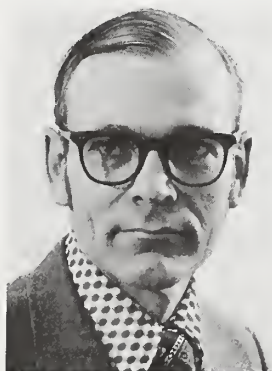
EFFICIENCY AND EFFECTIVENESS

Efficiency of a firm is measured by the degree to which its production function maximizes output for any feasible set of inputs, given its location and other constraints. A marketing system is considered efficient if (1) the firms in the system are economically efficient. (2) the industry is organized jointly to maximize scale and locational economies and (3) the industry operates under exchange mechanisms that conform to the competitive standards (2).

In parallel fashion, a Government program can be said to be operating efficiently if its clientele is being served in the best way possible for the administrative budget available to the administering Agency, given the set of laws and regulations under which the program is established, and the environment and other constraints under which it must operate. Conversely, efficiency can be defined as operating a program at a given level of service at the least possible administrative cost.

Criteria for best assessing the degree to which the clientele is being served may be the subject of some debate. Rates of participation among those eligible is one important criterion. Others include the dollar value of benefits disbursed to eligible participants, and the degrees of vertical or horizontal equity with which these benefits are disbursed. The degree to which benefits actually satisfy a recipient's "need" is an additional efficiency question. And, the administrative ease or lack of burden imposed on those participating is another.

It is useful to distinguish between program efficiency and program effectiveness. The latter is the overall degree



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to which a program performs in accomplishing its objectives. If a program is legislated to have nutritional objectives, it must be evaluated on that basis. If it is designed to raise farmers incomes, it must be assessed against that criterion. In short, program effectiveness is concerned with whether you are doing the right thing, whereas program efficiency is concerned with whether you are doing the right thing right.

In a technical sense, program evaluation is principally concerned with assessing program effectiveness. However, an inefficiently operated program cannot be effective. It is necessary, but not sufficient, for an effective program to be efficiently managed. Many policy questions ultimately concerned with evaluation are focused on efficiency. For that reason, I will address some activities that properly fall into each of the two boxes.

METHODOLOGY OF PROGRAM EVALUATION

The process of evaluating Government programs is a specialized job, a branch of economic and statistical analysis. But it involves interdisciplinary work that spans a full understanding of program operations, as well as a careful understanding of a host of program impacts. The major activities in conducting program evaluation fall in three areas: (1) clarification of objectives. (2) specification of evaluation criteria, and (3) choice of statistical and analytical methodology.

CLARIFICATION OF OBJECTIVES

The first step in conducting program evaluation is to clarify the program's primary objectives. That sounds easy, but it may not be. It often is necessary to go beyond the stated objectives in the legislation, or to interpret broadly stated objectives more precisely, in terms that lend themselves to measurement and formulation of researchable issues. Before proceeding it may be useful to reach an agreement with policymakers as to the relative importance of the objectives to be assessed.¹

SPECIFICATION OF EVALUATION CRITERIA

Food assistance programs have both primary and secondary impacts which can and probably should be evaluated in a comprehensive evaluation effort. Economists typically are prone to look mainly at cost-benefit analysis in conducting program evaluation. This approach is useful but not sufficient for evaluating food programs.

¹ In a technical sense, program evaluation can be limited only to an interpretation of criteria enumerated in the enabling legislation. But as a practical matter, that limitation may be unduly restrictive. Policy analysis may require assessing alternative objectives as well as alternative delivery systems in accomplishing those objectives, against which current programs would be assessed.

Impacts can be stratified as to impacts upon the primary recipients and secondary impacts on producers, the general economy, and taxpayers. Impacts on recipients include increases in their food expenditures, changes in dietary patterns, and changes in nutritional levels, as well as an implied transfer of income or in-kind resources. The emphasis given to these various criteria depends on the program's objectives. That choice can affect importantly the program's perceived effectiveness.

Take, for example, the impacts of the Food Stamp Program on recipients. The program provides scrip to recipients to allow them opportunity to buy a nutritionally adequate diet (current program). Has the program done its job if food expenditures have been increased to the point at which a nutritionally adequate diet could in fact be purchased? Or, must that money be spent in such a way that dietary patterns or "nutrition" of the participants are measurably improved? Choice among these criteria may lead to quite different conclusions regarding program effectiveness.²

STATISTICAL SAMPLING AND CONTROLS

Many studies of the food programs have been limited to case studies of individual situations or small groups of recipients. Such evaluations have only limited usefulness when drawing conclusions to suggest national policy changes. It frequently is part of the political process to generalize broadly based on one or two examples. But sound program evaluation must go beyond case studies; it must be based upon national probability samples in providing a basis for sound policy decisions.

Often, program impacts are less than the effects of other variables impacting on the same group of persons, which may lead to statistical problems. Cross-sectional comparisons often have been made between participant and nonparticipant groups of households, for example, that have quite different characteristics aside from the fact that they participate or do not participate in the Food Stamp Program. Don West provides some verification of this problem in his article elsewhere in this publication.

Statistically, one needs randomized experiments to be able to draw firm conclusions on differences found between experimental and control groups (1). Economic analysis often is plagued by the inability to conduct such randomization. To minimize the problem, pre-existing

² On this point, the new food stamp legislation appears to have shifted the program's emphasis among objectives. A nutritionally adequate diet is no longer required to be made available by the program. Implicitly, there appears to be more concern with increasing participation, due to the elimination of the purchase requirement. Only bonus stamps are provided to participants. Thus, the amount of food that can be purchased with these stamps will, in most cases, only supplement total household needs. The main exception is for very low income households that currently receive stamps free.

differences between the experimental and control groups can sometimes be measured and allowed for by regression or covariance analysis. But that is not always possible.

One way around the problem is to choose the control group in such a way as to maximize variability on the variables that one is trying to assess, and to minimize variability in nonrelated activities. Our experience in assessing household behavior has shown the desirability of letting households be their own control. Making comparisons over time on the same households, rather than between different groups of households, focuses attention on the impacts of the food programs by holding tastes and preferences of the control group constant. There are many factors associated with decisions on food choices besides food program status. Thus, simply comparing food purchases of participants with nonparticipants may fail to measure program differences.

Along with well designed statistical controls and carefully selected samples, multivariate analysis often also is necessary to isolate the impacts of programs because this multiplicity of factors may affect any given program at a specific point in time. Too often, program studies simply have relied on data representing single classifications of different variables. That procedure omits the impacts of the joint relationships among the important variables, and it may give incomplete as well as inaccurate results.

TIMELINESS

Food programs have been modified considerably over the past decade. Almost every year has witnessed major food program legislation of some type. For that reason, program evaluations need to be timely to assess the impacts of existing programs before new changes are introduced, and to allow policymakers an intelligent basis for their decisionmaking. The importance of timeliness often leads to tradeoffs with desirable features of evaluation. Studies often have been limited in scope for that reason. But good methodology should allow timely results without compromising quality of results.

IMPACTS OF THE FOOD PROGRAMS

As indicated, an assessment of the impacts of the various food programs is highly dependent upon the specific criteria selected in making the assessment as well as the evaluation methodology used. I will now assess some of the findings using some of the usual criteria. These include: (1) rates of participation among those eligible for the programs, (2) efficiency in increasing food expenditures, (3) changes in dietary and nutritional levels, (4) income transfers, (5) horizontal and vertical equity among participants, and (6) efficiency in terms of impacts upon food business.

PARTICIPATION RATES

Development of data on the degree to which food programs reach the target populations for which they are intended is not easy, for at least two reasons: (1) Eligibility criteria for the programs usually do not coincide with readily available secondary data on incomes and related information, and (2) Numbers of persons eligible as well as those that participate vary significantly from month to month, whereas published data are mostly annual.

For example, the number of people in poverty has often been used as a proxy in assessing participation rates of those eligible for the Food Stamp Program. Such comparisons ignore completely the asset criteria for participation. They gloss over monthly variability in incomes, since Census poverty data are annual averages. The income "disregards" are also largely ignored. Further, only national data have been available for this purpose in the past, whereas State and local data are badly needed.

Nevertheless, since data have been needed for policy purposes, the Food and Nutrition Service (FNS) has estimated the number eligible for each of the major programs by making a large number of assumptions and by using Mathematica's TRIM Model. Maurice McDonald, whose article appears elsewhere in this publication, is well known for his estimates regarding the number eligible for the Food Stamp Program.

The FNS estimates are consistent with those of McDonald up to a certain point, But they go a step further by estimating the unduplicated count of persons eligible and participating at least once during a period of time rather than only for a given month. FNS data show participation somewhere between the TRIM number of 52 percent and approximately 60 percent of those eligible for food stamps in a given month. About 70 percent of those eligible over a 12-month period are participating at least once during that period. Somewhere between 40 percent (Census data) and 70 percent (FNS survey) more people probably participate over a 12-month period than in any single month during that period. Thus, the Food Stamp Program currently is reaching perhaps 23 million different people at least once during a 12 month period rather than the 16 million reported monthly.

INCREASES IN FOOD EXPENDITURES OR VALUE OF FOOD USED

Various studies have shown that a \$1 increase in bonus food stamps likely results in an increase in food expenditures of between 30 and 60 cents. Most studies show figures in the range of 40 to 50 cents. Unfortunately, national average data on this subject are not available. Considerable variability in impact likely exists among households with different food requirements (based on sex and age, mainly), those with varying food preferences, those with alternative sources of food available, and those at dif-

ferent income levels that qualify for differing levels of stamps.

Estimates have been made, by ESCS and others, as to the impacts that eliminating the purchase requirement (EPR) will have on this relationship. But no hard data are available. Expectations are that the impacts will be somewhat less than for the current program. Boehm and Nelson, for example, used 35 cents in their article elsewhere in this publication for the average expected impact under EPR.

For the Child Nutrition programs, there is only one study that provides useful information on this subject, to my knowledge. The Washington State Study showed an increase in value of food available to the average household equal to about 60 cents for each \$1 of free lunches obtained, when lunches were valued at the price paid by the paying child. However, if lunches are valued at full cost, this efficiency is about cut in half. Nevertheless, the efficiency of the Child Nutrition free meal programs in increasing the value of food used may be at least equal to or perhaps greater than that of the Food Stamp Program, particularly after the elimination of the purchase requirement. This finding is counter to the expectation expressed by Ron Schrimper elsewhere in this publication.

DIETARY AND NUTRITIONAL IMPACTS

Changes in food expenditures and nutritional intake or in biochemical or anthropometric measures of nutritional status apparently are only loosely associated. Given an increase in food buying power, household members tend to buy more of the highly desired foods which may not necessarily be more nutritious. Many such foods have high processing and marketing costs which may mean little or no increase in physical quantity or nutrient value. In fact, the total pounds of food consumed in this country per capita actually declined slightly during the past 80 years of record, even though incomes have risen dramatically. At the same time, average consumption of some important nutrients, like protein, calcium, and Vitamin A has increased little or not at all (5).

Dietary impacts may or may not be improved by direct distribution of highly nutritious foods. If they are not desired by recipients, foods will likely end up in the garbage pail or be used as animal feed. Pat Madden in assessing dietary impacts of the Food Distribution Program and the Food Stamp Program in two counties of Pennsylvania found essentially no measurable impacts of the former program (4). He found some, though small, for the Food Stamp Program under certain conditions. He also tested for dietary impacts associated with income, but discovered no significant association, a fact not often noted in connection with his work.

Sylvia Lane, in her study of dietary impacts of the Food Stamp Program and Food Distribution Program in Kern County, California, found quite significant dietary impacts of the Food Stamp Program, but not much impact

of the Food Distribution Program. Food stamp recipients had significantly higher levels of intake of calories, protein, calcium, thiamine, and riboflavin compared with nonparticipants (3).

Little information on this subject is available from national studies. A major problem in assessing absolute levels of improvements in dietary and nutritional impacts of the food programs is that the evaluation criteria are extremely crude. Recommended Dietary Allowances (RDA's), often used to assess dietary status, are set at two standard deviations above the expected value of the mean of nutrient needs of the population. That means that dietary levels are expected to be too high for 97 percent of the population through the use of these criteria. It is no wonder that most studies resort to comparisons among groups rather than assessment against the standards of need.

INCOME TRANSFER

The other side of an increase in food expenditures is an increase in purchase of other items made possible as a result of the contribution to food buying income. All of the food programs provide food that substitutes at least in some measure for food that would have been purchased anyway. Freeing up money previously used on food allows it to be spent at the discretion of the recipient.

Income transfer is not an expressed objective of any of the food assistance programs. But many observers have judged the programs, particularly the Food Stamp Program, from that perspective. Nathan, for example, in an article earlier in this publication, was totally unconcerned about the food impacts of the Food Stamp Program. That is why he and many others are willing to cash out the program in favor of comprehensive welfare reform. Problems of vertical equity (particularly at the top end of the benefit schedule) and horizontal equity (unequal benefits to households of equal need) could be lessened by cash transfers.

HORIZONTAL AND VERTICAL EQUITY

The recent congressional debate on food stamp reform focused on both horizontal and vertical equity. This debate took the form of concern about:

- Program eligibility levels
- Disincentives to work
- Equality in benefit levels

These questions can all be assessed in terms of efficiency in accomplishing certain desirable things. Eligibility and benefit levels of the Food Stamp Program are set to maximize participation at the lowest income levels and to reduce or eliminate participation at high-income levels. The latest profile data (September 1976) show 62 percent of the persons and 78 percent of the participant households with gross monthly income below \$400. But 5 percent of the persons and 2 percent of these households had

incomes above \$750 per month—likely due primarily to the deductions for earned income. The new eligibility levels should eliminate some of these high-income participants by use of the poverty level as the threshold level of eligibility for net income. The threshold level of eligibility for a household of four will be over \$50 per month lower on a net income basis. The definition of net income has also been changed. On the other hand, elimination of the purchase requirement will encourage participation by those just below the threshold level of eligibility.

Disincentives to work are minimized under the Food Stamp Program by requiring a participant to give up only 30 cents in benefits for every additional \$1 of income earned. This rate is lower than for most other transfer programs. In addition, income deductions were kept in the new law for work related expenses (20 percent of earned income), and for child care expenses and excess shelter costs up to certain levels. This “negative tax rate” of 30 percent will keep benefits relatively low at the threshold level of eligibility. The notch should only be about \$17 per month at the threshold level of eligibility for a household of four.

The inequity in benefits under the National School Lunch Program and School Breakfast Program is lowered by offering a reduced-price meal. However, the Women, Infants and Children (WIC) Program and various direct food distribution programs are less efficient in this sense because they allow for benefits equal to 100 percent of the those allowed as soon as one becomes eligible.

Horizontal equity under the Food Stamp Program involves both the amount of stamps issued, which involves considerations of economies of scale over household size, and the size of the purchase requirement. Currently, all households of a given size receive the same amount of stamps, but for a given income level, they must pay somewhat more for their stamps as household size increases.

The existing schedule of benefits will be tailored significantly under the new legislation. The \$60 standard deduction will make benefits significantly higher than previously for the lowest income groups. Subtraction of a flat 30 percent of income across all income groups in deriving the level of benefits will equalize the previous distinction in purchase requirements over household sizes, except as influenced by the standard deduction. It remains to be seen how much adjustment takes place in participation in response to these changes. Currently, participation rates appear to be higher among large households than among small households, at any given income level.

IMPACTS ON THE FOOD INDUSTRY

Impacts of the food assistance programs upon the food production and marketing sectors of the economy have been judged to be rather small by several speakers at the food policy seminars. Boehm and Nelson in an article appearing elsewhere in this publication indicated that the current Food Stamp Program probably contributes about

\$2.75 billion to the food expenditures of low-income people out of the aggregate U.S. level of about \$220 billion. Ken Robinson in his article observed that this was an inconsequential amount. Thus he would give analysis of food programs a low priority on his research agenda for food and farm policy analysis.

It is true that this figure of \$2.75 billion looks small in relation to the \$220 billion. It even looks small compared to the \$180 billion in expenditures for food purchased for use at home, which is a more relevant comparison. However, when one adds on the impacts of the value of food used in the Child Nutrition programs and the WIC Program, the total impact becomes larger. The net impact of the total \$9 billion Federal food support is probably around \$4 billion, more than 2 percent of all food purchased for use at home. In terms of quantity produced on U.S. farms, it is likely to be somewhat less than 2 percent.

Consider, too, the gross amount of food purchased through these programs. In some sense this figure is a more relevant comparison with total expenditures than using only net impacts that assume elimination of the programs. The \$5 billion in Federal stamp bonus currently contributes toward about \$8 billion in total stamps issued (\$8.3 billion in fiscal 1977). The \$2 billion in Federal support of school meals contributes toward the cost of about \$4.5 billion worth of meals. The total food business that is impacted by at least one of the food programs amounts to about \$14 billion annually, or 6 to 7 percent of total food expenditures. That is equivalent to more than the sales volume of the two largest food chains combined. It also is equivalent to more than one-half of a year's exports of U.S. agricultural products. The increase in product demand at the farm level derived from the \$14 billion food program total is about \$5 billion.

I am surprised how quickly some economists ignore the economic importance of this amount of food business, considering the inelasticity of the supply of food at the farm level, particularly in the short run. It does not take much change in the quantity demanded at a given point in time for a large farm price and net farm income impact to occur. Surely we have been reminded in the last few years that the laws of supply and demand learned in Econ 101 have not been repealed.

Program impacts are much more important for some products than others. The Special Milk Program is an obvious example of a single commodity support. The WIC and Child Nutrition programs all concentrate heavily on use of dairy products—40 to 50 percent of total program spending.

The Food Use Survey of food used in the Nation's schools, under the direction of my Deputy, Dr. Chai, is nearing completion. It will give us national data on the kinds and types of food used in schools. Paul Nelson is finishing a study for FNS of food sales for stamps versus cash that will break down by commodity the sales for a small group of stores.

The recently completed phase II study by FNS of the impacts of the Food Stamp Program in Puerto Rico showed an increase of 30 percent in total food sales (after allowance for price increase) in 3 study areas after the program had been in operation for 12 months. (Average income fell 1 percent during the period.) Sizable increases in sales were recorded for beef, processed meats, fruits both fresh and processed, vegetable oils, bread rice, dried beans, poultry, pork, codfish, and sugar. These shifts, if generalized to the U.S. total, obviously would have important ramifications for producers.

IMPACTS ON FARM AND FOOD POLICY

Now at the last of these five seminars, one might ask what efficiency and effectiveness of food assistance programs have to do with the overall theme of the relationship between food and farm policy that we set out to explore. Certainly, the 6 to 7 percent of the food industry that is impacted by of the domestic food assistance programs is not going to determine the future direction of that industry.

In the first seminar, Howard Hjort emphasized the broad scope of our food system—the fact that it includes “farm income, farm prices, consumer food prices and expenditures, U.S. balance of payments, domestic inflation, domestic employment, Government program expenditures and so on.” He also talked of the “new constituency concerned with food and fiber policy.” Carol Tucker Foreman reiterated her remarks at the last Agricultural Outlook Conference when she stressed that food policy should start with determining the nutritional needs of people.

Then, at the fourth seminar, Ken Robinson swung the pendulum back the other way, claiming that food programs were not very important sources of food demand, and in fact that the demand side of the market itself was not that important. If one wants to affect food costs and what consumers eat, he stated, it is necessary to look at the supply side. Shades of Say’s Law (supply creates its own demand), it seems to me.

So, where does that leave us? Are we any closer to forging a link between farm and food policy? Actually, I do not hear Carol Tucker Foreman stating anything much different in concept from views expressed by Fred Waugh and other demand analysts a few decades ago. Fred always stressed that consumer demand controlled the market in the long run, and that farm prices were derived

after subtracting marketing costs from retail values (6). The main difference that I see is that Foreman perhaps implies some direct action to make consumer demands felt more precisely than if left completely to the operation of the market system.

I think that Ken Robinson was right, in one respect, when he stressed looking at both sides of the market for the independent variables that have the most impact on the ultimate factors that we wish to influence. He is correct that policymakers sometimes appear shortsighted in nitpicking small items and neglecting the more important factors. But, to some extent, that is our fault as economic technicians. Given the enunciated policy objectives, we need to provide better guidance as to how best to accomplish the job. That is where good program evaluation and policy analysis come into the picture, both in terms of policy that affects consumers and policy that affects farmers.

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FOOD PROGRAM EVALUATION: THE WASHINGTON STATE EXPERIENCE

By Donald A. West*

ABSTRACT

Impacts of participation in the Food Stamp Program (FSP) and the National School Lunch Program (NSLP) were analyzed using regression analysis. The objective is to compare participants with nonparticipants in the programs. For the population studied, participation in the FSP and NSLP increased the value of food obtained. Although this simple comparison suggests a weak relationship between nutrient intake levels and value of food, more information is needed for conclusive results.

KEYWORDS: Food program evaluation, Food Stamp Program, National School Lunch Program.

Policymakers are demanding more and more evaluation of food programs as these programs have grown in size, complexity, and amount of funding. These same factors have made the evaluation process more difficult. Researchers must continue to wrestle with the problems of program coverage, the level of benefits, and ways in which provision of food or food purchasing power contributes to nutritional objectives. To make their analyses relevant and maintain perspective, they must also stay abreast of new programs, program overlap, and modifications in existing regulations.

An important aspect of food program evaluation is assessment of impacts of benefits on participants' welfare. One measure of this impact is the increase in the dollar amount of food participants obtain. Food purchases by participants can be compared with those obtained before participation or those obtained by comparable nonparticipants at the same point in time. This approach is useful because a single indicator can be used to aggregate over all types and quantities of food. However, an adequate monetary value of food is a necessary but not always sufficient condition for meeting nutritional goals.

Once study objectives have been defined and key indicators of progress toward those objectives selected, the next questions are these:

- Who receives the benefits?
- How much do they receive?

- What groups eligible for benefits are not receiving them?
- And most importantly, for answers given to the first three questions—why were these the answers?

Progress has been made toward answers, particularly for the first three. Several studies have been conducted in the general area of profile analysis. Among those investigating Food Stamp Program (FSP) participation are Lane (2), Madden and Yoder (3), USDA (6), and the Joint Committee Print, (1).¹

The profile analyses permit comparisons among participants and nonparticipants. Factors considered include value of food obtained, family size and composition, level and sources of income, and, when data are available, nutritional intake. But because the number of possible comparisons grows geometrically with the number of characteristics, profile analyses seldom compare more than two or three dimensions at one time. Moreover, such comparisons do not force one to think in terms of *why* events, such as program participation, substantial outlays for food and/or meeting 100 percent of the Recommended Dietary

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¹Italicized numbers in parentheses refer to items in References at the end of this article.

Allowances (RDA's), occur among some groups but not others.

It is in the areas of asking why these events occur and of attempting to analyze them within frameworks that recognize a number of factors that economists have made and can continue to make contributions. By a willingness to make assumptions and to specify hypotheses in the form of "models", they have made progress toward estimating the kind and amount of impacts that food programs have.

OBJECTIVES

My intent is to present the major points which come from a study of impacts of participation in the FSP and/or the National School Lunch Program (NSLP) by residents of the State of Washington. In the study, results from socioeconomic profiles of FSP participants and non-participants were analyzed. Regression analysis was then used to estimate impacts of FSP and NSLP participation on value of food obtained by households, with controls for several socioeconomic characteristics. Nutrient intake profiles of FSP participants were also compared with those nonparticipating but eligible State residents.

The data used (latest available when this article was written) were collected in 1972 and 1973 as part of a larger FNS study of the NSLP and School Breakfast Program (SBP) in Washington state. The population of interest consisted of 8 to 12-year-old children enrolled in public schools and their households. Therefore, results presented here relate to members of households with small children and adult members who are near the middle of their life cycle.

A sample—stratified by participation in the NSLP, income (above and below the poverty level) and ethnic status—was used to collect data on characteristics of approximately 1,000 children and their households (4). Data relevant to the analysis reported here include the value and source of food obtained by the household, socioeconomic characteristics of the household, psychological attributes of the adult female, and 24-hour food intake for the school-aged child. Of the observations, 894 were complete for the required data.

The major objective of this analysis was to compare and assess FSP impacts within a subgroup who were eligible for the program. Consequently income and asset tests based on July 1972 to June 1973 FSP regulations were applied (see (5) for details). Of the 894 households, 332 were determined to be eligible for the FSP. Among this subset, 59 percent (196) were from households participating in the FSP and 41 percent (136) were not.

In table 1, the food program, socioeconomic, and psychological characteristics of FSP participants and eligible nonparticipants are compared. Note first that participants from households averaging 6.3 persons purchased stamps with an average face or exchange value of

\$146.46 per month. The mean purchase requirement for participants was \$80.17, or 54.7 percent of the exchange value of stamps. Participants reported spending an average of about \$29 per month in addition to stamps for food.

Table 1.—Socioeconomic characteristics of households eligible for food stamps, by FSP participation, Washington State, 1972-1973

Characteristics	FSP participants	Non-participants	Significance level for test of differences
Program variables:			
Food stamps:			
Mean exchange value/household/month	146.46 (42.35)	0	NA
Mean purchase requirement/household/month	80.17 (30.98)	0	NA
Mean bonus stamps/household/month	66.29 (32.13)	0	NA
Amount spent in addition to stamps/household/month	28.89 (30.57)	0	NA
NSLP lunches:			
Mean value/household/month	21.53 (13.89)	13.43 (14.68)	0.01
Participation, percent	85.1	58.1	.01
Mean value of food/household/month	203.42	185.77	
Mean value of food/adult equivalent/month	47.27 (10.21)	39.63 (12.21)	.01
Mean value of home-produced meat	2.816	6.346	
Socioeconomic variables:			
Mean total monthly income/household ¹	358.65	424.63	
Mean total monthly income/adult equivalent/month	92.43 (31.40)	104.42 (36.90)	.05
Pay period (percent)			
Weekly	18.0	28.9	
Biweekly	15.4	22.7	
Monthly	11.8	26.4	
Other	54.8	22.0	
Mean total assets/adult equivalent	1176. (2077.)	2429. (2739.)	.01
Mean liquid assets/adult equivalent	37.37 (41.96)	63.20 (76.87)	.01
Housing cost/month	84.83 (42.67)	90.99 (63.57)	NS
Mean household size	6.26 (2.47)	6.50 (2.08)	NS
Households with no adult male (percent)	56.1	21.3	.01
Ethnic status (percent)			
Blacks	30.1	20.6	
Mexican-Americans	26.5	40.4	.05
Whites	43.4	39.0	
Psychological variable:			
Index of physiological need/adult female	91.11 (13.06)	87.00 (13.88)	.01

¹Includes income from all sources, except FSP bonus stamps and NSLP free lunches.

Note: Standard deviations in parentheses.

NA = Not applicable.

NS = Not significant.

Among the FSP participants, 85 percent of the children also received free school lunches, compared with 58 percent among non-FSP participants. The average value

of free lunches (valued at 35 cents per lunch for 20 days per month) per household was \$21.53 for FSP participants and \$13.43 for nonparticipants.

The mean value of food obtained from all sources—purchases, gifts, home production, and hunting and fishing—by participating households averaged \$203.42 per household per month, compared with \$185.77 for nonparticipants. On an adult equivalent basis, the amounts of food obtained are \$47.27 for participants and \$39.63 for nonparticipants.

Incomes of participants, calculated as income from all sources except bonus stamps and free lunches, averaged somewhat lower than those of nonparticipants. The former's total and liquid assets also averaged lower in value. Housing costs, however, did not vary significantly among the two groups, nor did household size although females headed a higher percentage of the participant households.

This particular sample contained a higher percentage of black and a lower percentage of Mexican-Americans among participants. The one psychological variable, the index of physiological need, measures the adult females' (mother in most cases) concern for the physiological well-being of her family. The index value for those in participating households was larger than for females in non-participating households.

Selecting participating and nonparticipating subsets of the sample and then analyzing descriptive statistics allows comparisons of means for important variables. To go further in exploring why differences exist and in identifying net impacts requires additional analytical techniques. One approach is to use economic theory to specify a logical relationship, usually as an equation(s) in which factors such as program participation, income, and assets are hypothesized to affect dependent variables, such as the value of food a household obtained. Regression analysis of the data can then be used to estimate how and to what extent each factor influences the dependent variable while the others are held constant.

This approach was taken with the Washington State subsample (table 2). Table 2's first column contains estimates for coefficients made with total or combined groups of all persons eligible for the FSP. Participation added over \$5 per month per adult equivalent to the value of food. The mean level of bonus stamps per adult equivalent was about \$17. Consequently, the propensity to consume out of bonus stamps was approximately 0.3 at the mean.

A value of \$1 in the form of free NSLP lunches was estimated to add about \$0.51 to the value of food obtained by a household. This same coefficient was estimated using data from FSP participants only (column 2) and FSP nonparticipants only (column 3). The contribution to value of all food from \$1 in free lunches among participants, 0.896, is much larger than among nonparticipants, 0.216. Thus, FSP participants substituted the free lunch for other food less often. Similarly, a given amount of home-produced meat contributed more to value of food among participants although its average val-

ue for participants was only about half that for nonparticipants (table 1).

The level of monthly income per adult equivalent and the amount of liquid assets both increased the amount bought (dollar value), as expected. For the combined sample of all eligible, the income elasticity was 0.073. A similar measure for liquid assets was 0.029. Note that nonparticipants had a higher mean for liquid assets and that their value of food also was directly related to the level of liquid assets they hold.

Table 2.— Effects of food program and other variables on value of food (adult equivalent) by households eligible for food stamps, Washington State, 1972-73

Independent variables	Total eligible for food stamps (n = 331)	Food stamp participants (n = 196)	Nonparticipants (n = 135)
Constant term	31.871 (3.760)*	42.540 (3.974)	40.839 (2.695)
Food stamp participation (D) ¹	5.145 (4.261)	—	—
Value of free school lunch/ adult equivalent	.513 (2.693)	.896 (3.825)	.216 (.664)
Home-produced meat (D)	5.175 (4.030)	7.166 (4.851)	2.471 (1.102)
Ln monthly income/adult equivalent	3.239 (2.138)	1.391 (.713)	2.740 (1.108)
Liquid assets/adult equivalent	.0266 (2.736)	-.0167 (1.083)	.0491 (3.702)
Ln household size ² (6.929)	- 11.253	- 11.164 (5.882)	- 14.073 (4.487)
Pay period: Weekly (D)	-.528 (.340)	-.385 (.212)	1.077 (.399)
Biweekly (D)	-3.575 (2.333)	-1.211 (.683)	-3.770 (1.348)
Monthly (D)	-4.813 (2.983)	-7.558 (3.874)	-2.362 (.852)
Index of physiological need	.1228 (3.023)	.1467 (3.041)	.1030 (1.498)
Ethnic status: Black (D)	2.210 (1.591)	2.551 (1.646)	-.815 (.311)
Mexican-American (D)	-.181 (.126)	-2.713 (1.461)	.0430 (.018)
R ²	.358	.389	.326

*T—values in parentheses.

¹(D) Dummy variable.

²Ln = Natural logarithm.

The value of food per adult equivalent decreased as household size increased, an influential variable in all three models. Since household size was expressed in natural logarithms, the coefficient estimated for the combined sample indicates that the value of food per adult equivalent would decrease \$11.25 as household size

increased from 2.7 persons to 7.4 persons. This strong effect is not picked up by the age-sex composition of the household reflected in the adult equivalent scales. These economies may arise in food procurement and preparation as well as from variation in age and sex of household members not totally represented by the equivalence scales.

The length of the pay period was included to test for the impact of declining cash balances near the end of longer pay period on value of food. The results for all eligibles and for participants appear consistent with the hypothesis that the value of food declined as the length of the pay period increased. The relationship for non-participants does not appear as strong but one should remember that their level of liquid assets was also higher.

The index value of physiological need felt by the adult female in the household was directly associated with value of food, as expected. Among participants, the mean index value was not only higher but the value of food was also more highly correlated with the index level.

The remaining variable, ethnic status, was included as a control. Its influence, after that of the other variables had been recognized, was not large. This finding shows how differences that appear when simple means are compared may be explained by other socioeconomic and psychological variables.

The regression results indicate that, for the population studied, participating in the FSP and/or free NSLP lunches increased the value of food obtained. But the difficult question remains of how this increase contributes to progress toward nutritional goals. Descriptive statistics in our sample provide an initial indication. The means in table 3 are percentages of RDA's for 10 nutrients as revealed in the nutrient intakes of the 8- to 12-year-old children. Means in the first two columns are sample means for FSP participants and nonparticipants. Means in the middle two columns are weighted by ethnic proportions of Washington's population.

Differences in the weighted estimates for participants and nonparticipants are evident for five nutrients—calcium, phosphorous, iron, vitamin A, and riboflavin. Only

Table 3.—Nutrient intakes of 8 to 12-year-old children from households eligible for food stamps, Washington State, 1972-73

Item	Sample values		Sample value weighted by ethnic proportions in Washington's population		Sample values	
	Food stamp participants (n = 196)	Eligible nonparticipants (n = 136)	Food stamp participants	Eligible nonparticipants	Value of food adult equivalent less than \$44/mo. (n = 170)	Value of food adult equivalent greater than \$44/mo. (n = 162)
Percentage of RDA's						
Energy	77.4 (21.2)	78.5 (20.6)	79.2	78.7	77.2 (20.0)	78.5 (21.9)
Protein	171.4 (47.7)	173.3 (50.3)	179.5	175.1	170.8 (49.9)	173.3 (47.9)
Calcium	92.2 (40.1)	90.0 (36.3)	101.2	94.6	88.9 (37.7)	94.8 (36.9)
Phosphorous	122.8 (41.8)	122.9 (41.4)	131.5	125.5	120.2 (41.8)	125.6 (41.3)
Iron	94.8 (40.8)	94.5 (39.6)	100.1	95.1	92.4 (40.3)	97.1 (40.2)
Vitamin A	123.7 (80.0)	118.1 (80.9)	131.5	122.0	115.1 (78.6)	128.0 (81.8)
Thiamin	101.1 (56.7)	99.1 (63.6)	109.1	105.9	95.7 (46.6)	105.1 (70.5)
Riboflavin	151.0 (69.7)	144.7 (61.1)	167.3	150.4	143.1 (63.0)	153.3 (70.1)
Niacin	93.3 (40.0)	90.2 (37.3)	98.9	93.9	89.8 (37.0)	94.4 (40.9)
Vitamin C	170.7 (128.5)	175.3 (139.0)	177.6	176.2	170.6 (130.4)	174.7 (135.4)

Note: Standard deviations of variables are in parentheses.

the difference for riboflavin was found to be significant, however. The percentages of RDA's for these five nutrients among FSP participants exceeded those for non-participants, results consistent with those of some earlier studies. (See the summary in (7) pp. 74-76).

The percentages in the remaining two columns of table 3 are means for subsets classified by the monthly value of food obtained per adult equivalent. The percentages for the group with greater values of food are somewhat larger than those for the group with smaller values of food, across all 10 nutrients, but no difference is statistically significant. Although this simple comparison suggests a weak relationship between nutrient intake levels and value of food, more investigation is needed before any definitive conclusions or inferences can be drawn.

CONCLUDING THOUGHTS

Although substantial progress has been made in some areas of food program analysis, the demand for this type of information is far from being met. Questions remain as to which program variables can be manipulated to bring about desired results. More work of this type examining why certain impacts (or their lack) occur could provide results helpful to policymakers. One approach would be to replicate this type of study using a sample which represents a broader population, in terms of both age and sex composition of households and geographic coverage. The methodology could be improved by additional efforts to recognize and control differences in tastes and preferences by the use of more psychological variables. Another area of challenge is to identify linkages

between the economic dimension of the programs and their nutritional goals.

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TRACING THE PROCESS OF FOOD STAMP USE AND REDEMPTION

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ABSTRACT

Since 1973, nearly \$33 billion in food stamp coupons have been issued. While the U.S. Government is technically liable for the redemption of all coupons issued, the liability is not realized until the stamps are used and presented to the U.S. Treasury for payment. Therefore, redemptions would not be expected to equal issuance. About \$230 million of the stamps issued since 1970 have not yet been presented for payment. Further, while most coupons are used in the month they are issued, about 35 percent of the issued stamps are not presented for redemption until 1 month following issuance. Lags in the process therefore appear to result from lags in banking system clearance.

KEYWORDS: Food Stamp Program, food stamp redemptions, food stamp use.

INTRODUCTION

The Food Stamp Program (FSP) has grown substantially since it became part of permanent legislation in 1964. By July 1970, the number of program participants had reached 7 million. Monthly stamp issuance had grown to \$165 million, of which \$98 million were bonus stamps. Five years later, in July 1975, participation had reached more than 19 million persons per month. The total value of stamps issued had reached \$700 million. Bonus value, about 60 percent of total issuance, was about \$425 million. Monthly program participation since 1975 has stabilized at about 17 million, while monthly issuance and bonus value have averaged about \$700 million and \$400 million. Coupons used to purchase food totaled about \$8.7 billion in 1976—about 5 percent of the total spent for food (3).¹

While the level of total program activity has stabilized somewhat, some seasonal variations continue. Such monthly variations in the level of program activity tend to complicate administrative procedures. One activity, administration of the appropriation and coupon redemption account, is made substantially more difficult.

Agricultural economists have had a sustained professional interest in problems relating to the efficient operation of the food system generally. However, little published research exists on operational issues which relate to the FSP. In this article we report the results of one recent effort to investigate a rather fundamental aspect of program operations—coupon redemption. Both the extent of coupon loss (or nonuse) and the length of the lag between issuance and ultimate coupon redemption are identified.

STAMP REDEMPTION

The food coupon redemption process actually involves a series of coupon-cash transfers, each with its own Food and Nutrition Service (FNS) reporting requirement (2). Coupons are currently issued through field offices to over 13,000 local stamp vendors. These vendors include banks, Government agencies, and others authorized by the particular State agency responsible for operation of

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¹ Italicized numbers in parentheses refer to items in References at the end of this article.

the FSP. These vendors issue the stamps to program participants. In return, participants surrender the cash requirement (if any) and their authorization-to-purchase (ATP) card. The signed ATP card is proof of issuance. Vendors deposit the "purchase requirement" cash and return the ATP card to FNS. The deposit slip becomes proof of their deposit.

Recipients may then use the stamps to buy food. Since it is unlikely that stamps are used immediately, some time lag occurs. Once the coupons are used, retailers deposit them with their banks. The deposit slips are forwarded to the FNS data center. The stamps are then cleared through the banking system and, ultimately, one of the 12 Federal Reserve district banks. The coupons are counted and destroyed at the district bank level. Once the coupons reach the Federal Reserve bank, the bank is authorized to deduct the redeemed amount from the USDA/FNS redemption account, and it sends verification of these deductions to FNS. Technically, the coupons are not "redeemed" until the deduction is made from the redemption account. FNS often does not get verification of all deductions until several months after they have been made.

Levels of monthly coupon issuance are related to the actual requests for redemption in table 1 data. During the 60-month period from July 1972 to July 1977, \$32,958.4 million in coupons were issued to program participants. As of July 1977, the U.S. Treasury had redeemed \$32,716.4 million, 99.3 percent of all stamps issued. Apparently, very few stamps issued are not, at some time, redeemed. However, as noted, the coupon redemptions lag somewhat their issuance date. During the period of rapid program growth (FY 1974, in particular) redemptions were averaging about 3 percent less than issuance.

In FY 76, when issuance stabilized at about \$720 million, stamp redemptions actually exceeded issuance.

Available data for 1977 also support this conclusion. Stamp redemptions for the first 6 months of the year were 99.7 percent of issuance. If redemptions lag within the year, they would likely be relatively lower in the first 6 months when issuance is seasonally higher. If this assumption is correct, the data will show redemptions exceeding issuance in the latter half of the year; thus, for the year, issuance and redemptions will be about equal.

The Administrative task for the Department of Agriculture, complicated by the length of these unknown lags, is to time by month the transfer of appropriated funds to the redemption account. The timing of these transfers, so that they coincide with requests for stamp redemption by the Federal Reserve, is crucial because a Government-financed interest liability is implied when unneeded funds are transferred from appropriations to the redemption account.

This task will become more complicated after the purchase requirement is eliminated (EPR). Currently, cash deposits for the "purchased stamps" are credited to the redemption account. Therefore, if a lag occurs between stamp issuance and the request for redemption, as these data appear to indicate, cash deposits from current stamp issuance have been available to partially cover requests for the redemption of stamps issued in prior periods. With EPR there will be no purchase funds.

STATISTICAL MODELS

A five equation system of single equation models was developed to describe statistically the various aspects of

Table 1.—Food stamp issuance and redemption, fiscal years 1972-77

Year	Issuance	Federal Reserve requests for redemption	
	----- <i>Million dollars</i> -----	<i>Percent</i>	
1973	3,888.95	3,851.40	99.2
1974	4,727.45	4,627.80	97.9
1975	7,265.62	7,145.96	98.4
1976 ¹	10,763.34	10,797.22	100.3
1977 ²	6,313.04	6,294.06	99.7
Total	32,958.40	32,716.44	99.3

¹ Includes 15-month period from 7/1/76 to 9/30/77.

² Data for 10/1/76 to 6/30/77.

the coupon redemption process. The models are as follows:

- (1) $ISS_t = f(EMP_t, ISS_{t-1}, FPI_t)$
- (2) $GSR_t = f(ISS_t, FS_t)$
- (3) $FRR_t = f(GSR_t, GSR_{t-1}, BA_t)$
- (4) $CD_t = f(ISS_t, BA_t)$
- (5) $PMT_t = f(BR_t, BR_{t-1}, BA_t)$

Where:

- ISS = the dollar value of the coupon issuance in a month,
 EMP = The level of national unemployment, in percent,
 FPI = the consumer price index for food.
 GSR = the dollar value of coupons redeemed at the grocery store level during a month,
 FS = the dollar value of U.S. food sales,
 BA = the number of banking days in the month,
 FRR = the dollar value of the coupons redeemed at the U.S. Treasury Department by Federal Reserve banks during a month,
 CD = the dollar value of cash deposits (purchase requirement cash) within the month,
 PMT = the dollar value of the actual Government redemption payment—(FRR minus CD), and
 BR = the dollar value of bonus stamps redeemed in a month,

Subscripts identify the observations as either current or lagged values.

The first three equations trace the systematic redemption path for food coupons from issuance to a participant through use in a grocery store and finally, to redemption by one of the Federal Reserve banks. Equation (1) is fundamental to the system since it describes the coupon issuance level. Variables which are closely associated with

eligibility are included in the model, such as the rate of unemployment and the consumer price index for food. Issuance lagged 1 month is included to account for the changes in rules which are responsible for the current level of participation in the program.

Only the one-period lag in Equation (3) survived the statistical search for a distributed lag structure (1). In Equations (2) through (5), lags as far back as 3 months prior were tested. However, none of these lags, save the lag in Equation (3), were statistically significant.

Equations (4) and (5) provide auxiliary pieces of information regarding the process of stamp use and redemption. Equation (4) describes the cash deposit process, one affected by both stamp issuance and banking days. Equation (5) is specified in an effort to focus on the monthly Government payment for issued stamps (that is, the difference between the monthly requests for stamp redemption and the cash deposit).² This Government liability can be shown to be a function of the bonus stamps redeemed in both the current and previous month and the number of banking days.

RESULTS

Parameter estimates for the variables in these five equations were obtained with ordinary least squares regression. Monthly observations for all variables from July 1970

² Government payment liability is less than the total redemptions because of the food stamp purchase requirement. Cash deposits from the sale and issuance of stamps have accounted for about 40 percent of total redemptions.

Table 2.—Statistical results, food stamp redemptions, 1970-77

[1]	Coupon issuance = -149,291,810. + 1,127,530. [EMP _t] + 128,608. [FPI _t] + 0.76 [ISS _{t-1}] (330,569) (31,363) (0.06) R ² = .994, F = 4376., DW = 1.7, \bar{Y} = \$469,672,162., S _y = \$15,524,813.
[2]	Grocery store redemption = -39,319,180. + 0.98 [ISS _t] + 3.85 [FS _t] (0.05) (5.59) R ² = .974, F = 1149., DW = 2.6, \bar{Y} = \$529,950,182., S _y = \$29,070,240.
[3]	Federal Reserve redemption = -420,397,037. + 0.65 [GS _t] + 0.32 [GS _{t-1}] + 20,896,977. (0.13) (0.13) (5,660,762) R ² = .924, F = 240., DW = 3.11, \bar{Y} = \$538,391,207., S _y = 51,165,845.
[4]	Cash deposits = -72,071,104. + 0.36 [ISS _t] + 4,439,632. [BA _t] (0.02) (3,785,646.) R ² = .774, F = 140., DW = 2.02, \bar{Y} = \$190,662,741., S _y = \$39,469,319.
[5]	Government payments = -335,198,660. + 0.68 [BR _t] + 0.32 [BR _{t-1}] + 16,360,888. [BA _t] (0.29) (0.28) (7,257,018) R ² = .776, F = 67., DW = 2.6, \bar{Y} = \$316,117,162., S _y = \$65,245,686.

Note: Coefficient standard errors are in parentheses.

through June 1977 were used for the analysis. Data were obtained from account records maintained by FNS.

Results of the estimation are summarized in table 2. In general, the variables in each of the models were able to account for substantial amounts of the total variation in each dependent variable vector. There was, however, some evidence that a serial correlation problem existed in Equation (3). This problem is likely the result of data reporting problems rather than either missing variables or inappropriate functional form.

Equations (1), (2), and (3) indicate a great deal about the coupon issuance, use, and redemption process. Both the rate of unemployment and general increases in the food price index exerted statistically significant, positive influences on monthly stamp issuance, other things being equal. Stamp use apparently occurs in the month the stamps are issued. A \$1 increase in issued stamps resulted in approximately a \$1 increase in monthly grocery store-to-bank redemptions. While not statistically significant at the 0.05 level, increases in food sales during the month did positively influence grocery store-to-bank redemptions. This relationship may reflect times when food coupons are "saved" for use during months with food-related holidays.

Equation (3), the Federal redemption model, somewhat supports the hypothesis of a lag in redemption of some coupons. About 65 cents of each dollar deposited by grocery stores in the current month actually are redeemed by the Treasury Department in that month. The other 32 cents is not reported as redeemed until the month following the deposit. *Ceteris paribus*, the banking system has been redeeming approximately \$20 million more coupons in months when there are 22 banking days (1 more than the average 21).

Bank deposits of the cash transfers resulting from the existence of the purchase requirement apparently do occur without a lag. Over time, the purchase requirement has resulted in the collection of about 40 cents for each \$1 in coupons issued. Statistical results, while explaining only about 80 percent of the total variation in cash deposits over time, do imply that for each \$1 increase in current month issuance about 36 cents is deposited. The relatively low explained variation (R^2) partially reflects the rather erratic deposit pattern characteristic of the early years of the program. Since 1975, however, monthly cash deposits have been closely associated with current issuance.

Equation (5), Government payments, is of particular interest now that the food stamp purchase requirement has been eliminated. This model may prove to be the most useful in helping ultimately to manage the food stamp redemption account. In addition, the model provides a partial test of the validity of the other statistical results. Assuming that the other results are indicative of actual program activity, it can be shown that bonus stamps issued in month t and in month $t-1$ should be included in the specification of the "payments" model.

Further, it can be shown that current month payments should increase about 33 cents for \$1 of current

month bonus and about 67 cents for each \$1 of bonus issued 1 month previously.³ As indicated in table 2, these theoretical specifications cannot be rejected by the statistical results. The t tests, assuming that the regression coefficients for RB_t and RB_{t-1} are 0.33 and 0.67 respectively, do not permit rejection of the null hypotheses. As was true in the other redemption model (Equation (3)), the number of banking days in the month exerted a statistically significant positive impact on the value of stamps redeemed.

CONCLUSIONS

The results of this research appear to provide a useful tool for the explicit monitoring of the USDA food stamp redemption account. While it is granted that the U.S. Government is technically liable for all stamps issued, the liability is not actually effected until issued coupons are presented, by agents of the Federal Reserve, for payment. Explicit recognition of both coupon loss and the lag in redemption reduces the public liability for interest payments on short term borrowed funds to finance the program.

A relatively small percentage of the stamps issued, is never presented for payment. Total value of all unredeemed stamps, about \$232 million, is, however, substantial.

The study tends to support the hypothesis that coupons are used to purchase food items during the month issued. The approximately 1-month lag in the redemption of some stamps is apparently due to lags in the banking system. Cash deposits from purchased stamps do not appear subject to a lag. Therefore, cash deposits in month t , associated with stamps purchased in month t , have been available to help cover current-month requests for redemption of stamps issued in the previous month. These cash deposits will no longer be available now that the purchase requirement has been eliminated. Requests for redemption of the issued bonus stamps will likely be highly correlated with bonus issuance in month t , previous month bonus, and the number of banking days in month t .

³These expected results can be shown as follows:

Payment = (redemptions - cash deposits), and
Redemptions = (0.60 current issuance + 0.40 issuance $t-1$), and

Cash deposits = (0.36 current issuance),

Payments = (0.60 current issuance + 0.40 issuance $t-1$) - 0.36 current issuance,

Payments = 0.24 current issuance + 0.40 issuance $t-1$,
but since

Issuance = 0.60 bonus + 0.40 cash payment, we obtain
Payments = 0.33 bonus t + 0.67 bonus $t-1$.

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PRICE AND PROGRAM POLICIES AFFECTING PARTICIPATION IN THE NATIONAL SCHOOL LUNCH PROGRAM

By Walter B. Epps*

ABSTRACT

Effects of three administrative policies on student participation in the National School Lunch Program (NSLP) were analyzed. All three—(1) use of central kitchens, (2) sale of a la carte foods during the lunch hour, and (3) the grant of permission to leave school during the lunch period—reduced participation significantly.

Effects of both lunch policies and prices need to be considered in actions designed to maintain or raise levels of participation. Lower lunch prices imply increased participation nationally but effects may be offset by increased service of lunches prepared in central kitchens or increased availability of a la carte foods.

KEYWORDS: National School Lunch Program, Child Nutrition programs, food programs.

INTRODUCTION

The Federal Government began direct cash support of hot lunch programs in schools with passage of the National School Lunch Act in 1946. In the preceding decade, the Government had donated commodities to States for distribution to schools as part of an agricultural adjustment program designed to encourage the domestic consumption of surplus agricultural products. The 1946 act continued commodity support through a commodity purchase and distribution provision; in addition, it appropriated funds for cash grants to schools for local food purchases. Other provisions allowed use of part of the appropriated funds for buying equipment and paying administrative expenses, defined minimum nutritional standards, and required that lunch programs be nonprofit.

Succeeding legislation kept the original provisions and expanded the amount and scope of Federal assistance. The Child Nutrition Act of 1966 authorized establishment of pilot breakfast programs in schools, increased equipment buying assistance, provided money for added staffs made necessary by expanded lunch and breakfast programs, and adopted extended funding for milk served in schools, nurseries, and other child-centered institutions. In 1970, the Congress set uniform national guidelines for free and

reduced-price lunch eligibility and it authorized the appropriations to pay for an enlarged free lunch program.

The National School Lunch Program (NSLP) provided meals to half the Nation's 51 million school children in 1975 on any given school day (table 1). Underwriting this extensive coverage were expenditures of \$3.9 billion for grants, food, and service from all sources. Forty-five percent (\$1.7 billion) were Federal contributions.

Beginning in the mid-sixties, local lunch programs faced persistent rises in production costs because of rising labor and food costs. These changes prompted school systems to increase lunch prices in attempts to cover higher costs. In the early seventies, numbers of children paying full price declined. In 1975, for example, fewer lunches were bought at full prices than in 1970 (table 1). This decline was associated with smaller enrollments and with an expanded free and reduced-price program. It is

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Table 1.—Student participation, lunch service, and expenditures, National School Lunch Program, 1947-1976

Fiscal Year	Enrollment	Participant	Lunches services			Expenditures		
			Total	Full price	Free and reduced price	Total	Federal	State local, and children
1947	26.6	6.6	910.9	801.6	109.3	221.1	70.4	150.7
1950	27.5	a.6	1,275.9	1,063.7	212.2	367.6	119.7	247.9
1955	34.0	12.0	1,806.6	1,616.7	189.9	611.6	152.3	459.3
1960	40.6	14.1	2,142.3	1,925.1	217.2	1,001.7	225.8	775.9
1965	48.1	18.7	2,892.3	2,606.5	285.8	1,492.8	402.8	090.0
1970	52.1	23.1	3,565.1	2,826.6	738.5	2,217.0	565.4	651.6
1971	51.9	24.6	3,848.3	2,842.6	1,005.7	2,493.0	809.5	1,683.5
1972	51.9	24.9	3,972.1	2,686.8	1,285.3	2,730.3	1,050.8	1,679.5
1973	51.3	25.2	4,008.8	2,606.4	1,402.4	2,956.1	1,139.8	1,816.3
1974	51.3	25.0	3,981.6	2,503.5	1,478.1	3,372.4	1,401.4	1,971.0
1975	51.0	25.3	4,063.0	2,425.1	1,637.9	3,863.0	1,705.7	2,157.3
1976	50.5 ¹	25.8 ¹	4,145.8 ¹	2,362.8 ¹	1,783.0 ¹	4,133.5 ¹	1,893.5 ¹	2,240.0 ¹

¹ Preliminary.

Source: Fiscal Year 1975 statistics and historical tables, Food and Nutrition Serv., U.S. Dept. Agr.

likely that the somewhat higher lunch prices also contributed.

Several researchers have focused on the price-participation relationship (1, 2, 3, 4, 6).¹ They found that, in total, children participated more when prices fell and less when they rose. Administrative policies that may affect participation have received scant research although their potential for changing participation patterns is often recognized.

Three such policies are of particular interest: (1) allowing sales of individual foods at lunchtime along with sales of regular lunches, (2) permitting students to leave campus during lunch hour, and (3) preparing lunches in central kitchens for service to students at individual schools in the system.

Local sales of individual foods are covered by Federal guidelines which outline the conditions of competing food sales and specify the use of receipts from these sales. One view is that such sales compete with the regular lunch. Another is that the wider range of offerings encourages participation in the NSLP because they attract students who otherwise would not have gone to the lunchroom and that some will buy a regular lunch.

The practice of permitting students to leave campus during the lunch period predates establishment of the

NSLP. Common to a number of program schools, the practice is particularly widespread among elementary schools. Some observers feel that this practice exerts no influences (since a local program's normal service levels reflect an allowance for students leaving campus); others think that it reduces participation in the regular lunch program.

As a cost-cutting measure, a number of local school systems have adopted or expanded the practice of preparing lunches in central kitchens for delivery to students at schools elsewhere in the system. Although it has a long history in the NSLP, increased central preparation in recent years denoted a gradual shift of emphasis from earlier times when central kitchens were used to extend lunch service to children in schools without kitchen facilities. Central kitchens sometimes extend lunch services to schools without a meal program, thus expanding NSLP participation. But as replacements for previously self-contained, independent school kitchens, their influence on lunch participation is open to question.

PARTICIPATION

PROCEDURES

The analysis used information from a 1972 survey (the most recent available) of the Nation's elementary and high schools conducted by USDA's Statistical Reporting

¹ Numbers in parentheses refer to References listed at the end of this article.

Service (now part of the Economics, Statistics, and Cooperatives Service) for USDA's Food and Nutrition Service. Designed primarily to determine the racial composition of participants in local school lunch programs, the survey also provided information about current practices. Data were obtained through a systematic random sample of public and private schools drawn from lists maintained by the U.S. Office of Education. They represent the school universe in the 48 contiguous States and the District of Columbia. The sample included schools that participated in the National School Lunch Program (NSLP) and schools

with other feeding services. Only NSLP schools were used in the analysis; for their major characteristics see table 2.

To analyze lunch participation, a model was specified that incorporated the three traditional program policies mentioned earlier, plus price. Model parameters were estimated by applying ordinary least squares regression procedures.

Several basic variables were used. The dependent variable was participation rate, defined as the ratio of the number of students buying type A lunches at regular prices to the number of potential buyers attending school

Table 2.—Characteristics of National School Lunch Program schools by grade level, 1972

Characteristics	Grade		
	All schools (N = 528)	High schools (N = 212)	Elementary schools (N = 316)
	<i>Percent</i>		
Participation rate (percent):			
Under 20	12.7	20.8	7.3
20 - 29	10.2	14.6	7.3
30 - 39	9.8	11.3	8.9
40 - 49	9.7	12.7	7.6
50 - 59	10.4	8.5	11.7
60 - 69	14.4	14.2	14.6
70 or more	32.8	17.9	42.7
Total	100.0	100.0	100.0
Lunch price (cents):			
Under 20	0.4	0.0	0.6
20 - 29	6.8	4.2	8.5
30 - 39	42.8	29.7	51.6
40 - 49	42.6	50.5	37.3
50 - 59	7.0	14.6	1.9
60 - 69	0.2	0.5	0.0
70 or more	0.2	0.5	0.0
Total	100.0	100.0	100.0
Campus policy:			
Open campus	39.5	27.3	47.8
Closed campus	60.5	72.7	52.2
Total	100.0	100.0	100.0
Lunch alternatives:			
Available	20.4	42.9	5.4
Not available	79.6	57.1	94.6
Total	100.0	100.0	100.0
Preparation site:			
On campus	85.2	92.4	78.0
Off campus	14.8	7.6	22.0
Total	100.0	100.0	100.0
Enrollment:			
Up to 499	27.5	12.8	37.4
500 - 999	43.5	33.4	50.3
1,000 - 1,999	23.1	39.7	12.0
2,000 and over	5.9	14.1	0.3
Total	100.0	100.0	100.0

at lunchtime. Students in work-study programs or on split-shifts were excluded. Excluded also were students certified to receive free or reduced-price lunches.

Five independent variables were used to assess variation in participation rates: lunch prices, the availability of alternatives to lunch, the existence of an open campus policy at lunch hour, the preparation and service of lunches at the same school, and school enrollment.

Prices were for lunches sold at highest prevailing prices. Lunches sold at reduced prices were excluded; their ceiling price was 20 cents at the time of the survey. A weighted average price is conceptually superior but the difference in the simple and weighted price was negligible because relatively few schools sold reduced-price lunches in 1972.

Program policies were entered as dummy variables. The reference group in each case was the group of schools adopting that indicated policy.

Enrollment was classified into four size groups: under 500 students, 500-999, 1,000-1,999, and 2,000 or more. These enrollment groups were also specified as dummy variables. The reference group was the class with under 500 students.

Separate estimates were developed for high schools and elementary schools following a test of equality of coefficients of high school and elementary school regressions which showed that student responsiveness differed with grade level.

RESULTS

The basic results of the analysis appear below (table 3):

- The price coefficients were statistically significant and had negative signs, indicating that participation rates decreased in each grade when lunch prices rose and increased when they fell.
- Open campus policies were associated with lower participation rates in high schools and elementary schools.
- Alternatives to the regular lunch lowered high school and elementary school participation rates.
- More students participated when lunches were prepared and served on the same campus in elementary schools. Preparation site had no apparent influence on high school students' participation.

Table 3.—Regression coefficients showing average participation following changes in lunch prices and program practices, by grade level, National School Lunch Program, 1972

Independent variables	High schools	Elementary schools
Price	-1.21* (0.14)	-1.41* (0.18)
Open campus.....	-15.21* (3.24)	-8.46* (2.33)
Alternative to lunch	-14.28* (3.28)	-24.52* (5.18)
Lunch prepared on campus.....	3.42 (5.49)	19.49* (2.92)
Enrollment:		
500-999.....	4.89 (4.88)	-11.04* (2.49)
1,000-1,999.....	4.20 (4.87)	-19.30* (3.88)
2,000 and over.....	-1.89 (6.30)	-34.16** (20.47)
Intercept	96.53	109.25
Standard error of the estimate.....	20.75	20.15
Amount of variation explained.....	38	45
Number of schools	212	316

(Standard errors of regression coefficients in parentheses).

*Statistically significant at the 1-percent level.

**Statistically significant at the 10-percent level.

- Participation rates fell as elementary school size increased. High school rates were unaffected by school size.

Overall, the independent variables explained 38 percent of the variation in high school rates and 45 percent in elementary school rates.

Price

All price coefficients were highly significant and all were negative. There was a negligible difference in the price responsiveness of elementary and high school children. One might expect reactions to price changes to be substantially greater among high school students because they have more alternatives and fewer institutional restrictions. However, elementary schoolchildren's parents are likely to share or to dictate decisions about their children's lunches.

Participation rates of high school and elementary students changed 1.2 and 1.4 percentage points, respectively, for each penny change in lunch prices.

Open Campus

An open campus policy implies a reduced potential lunch population. This policy may be expected to increase the availability of substitutes for lunch. The signs of the campus policy coefficients support this interpretation; participation was significantly lower in high schools and elementary schools with open campus policies.

Alternatives to Lunch

Participation rates were significantly lower in grade schools where alternatives to the regular lunch were available. The negative signs on the relevant coefficients suggest that a la carte foods sold at lunch hour compete with regular lunches. These sales reduced participation in elementary schools much more than in high schools, although their effects were substantial at each grade level.

Lunch Preparation Site

Substantially higher rates of participation were associated with the on-site preparation and service of lunch in the elementary schools. Since all lunches conformed to the type A standard they should have been the same nutritionally. The greater apparent acceptability of lunches prepared on-site might imply that students noticed other differences between the type(s) of lunches. Schools with internal facilities may control the choice of food to be served, its preparation, and its appearance to a much greater degree than those receiving and serving lunches prepared elsewhere. It is likely that this flexibility accommodated a wider range of student tastes.

Participation rates in high schools where lunches were not prepared on-site were no different than in high schools where preparation and service were combined. Most high schools prepared their own lunches. This self-sufficiency combined with greater availability of on-campus alter-

natives minimized possible influences of imported lunches in the upper grades.

Enrollment

Large elementary schools (over 500 students) had significantly lower participation than did small schools (under 500 students). Large elementary schools are found more frequently in urban areas, which provide relatively more options for lunchtime activity. "Middle schools," those containing one or more grades intermediate to elementary and high school, are more likely to be found among the larger elementary schools. These schools have a larger proportion of children in the age range of early junior high. Their food tastes and money resources may be quite different from younger children's.

Lower participation in large elementary schools may also reflect decreased control of students because of more complex but less flexible class and activity schedules and greater difficulty in managing movement of large numbers of students. Large high schools also might be expected to face scheduling and control tasks with similar participation effects; however, all high school size coefficients were statistically nonsignificant. The absence of size effects likely reflects that high school students are granted relatively greater freedom of choice than elementary school children.

IMPLICATIONS

Administrative policies and price apparently alter lunch participation substantially. These findings are pertinent in examining a basic issue in lunch program administration: how to maintain paid participation levels under pressure of rapidly rising lunch costs.

There is little doubt that lower lunch prices will increase participation. But the strong influence that school policies apparently exert emphasizes the desirability of considering their effects along with those of price, particularly since actions to reduce costs through adopting central kitchens or to increase total lunch revenue through a la carte food sales may offset the effects of lower lunch prices.

Fewer students are likely to buy the regular lunch where a la carte food sales are allowed. This conclusion is based on lunch operations during a period when Federal rules restricted sales of a la carte foods to those permitted as part of a type A lunch. The rules then in effect also prohibited the operation of other food services at times or in places that constituted competition with the nonprofit lunch program. Study results indicate that, although these stringent rules applied, fewer students bought the regular lunches when schools offered foods a la carte.

Further, a policy change may affect participation more at one grade level than another. That lower and upper grades are different markets in some ways is also likely. For example, current proposals being reviewed provide for scaling lunch size with smaller portions served to

children in lower grades and larger amounts in higher grades. Similarly, a more restrictive policy for a la carte food sales may be more effective in elementary than high schools because of the relative ease of its implementation with younger children.

Few high schools operate on a satellite food preparation basis. Therefore, from a cost-cutting standpoint, high schools offer greatest expansion possibilities for off-site lunch preparation. There is little evidence to suggest that high school students would react any differently than elementary children to lunches prepared off-site. Moreover, high school students will have more choices to turn to since more of their schools offer alternative foods.

Because of its long acceptance, an open campus policy may be difficult to change although, along with price and satellite decisions, the decision is one reserved to local officials. Modification of this traditional policy may be eased by the continuing trend of closing smaller elementary schools and the increased movement of children within school districts for specialized instruction or equalization of district resources.

While size apparently has no direct effect in the sense of being a program option subject to alteration, its association with lower participation in grade schools underscores the subtle but real influence of institutional forces not related directly to the lunch program.

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THE NEW CONGRESSIONAL BUDGET PROCESS: IMPACT ON FOOD AND NUTRITION POLICYMAKING

By G. William Hoagland*

ABSTRACT

The formation of a national food and nutrition policy will require a reordering of national priorities. The new Congressional budget process helps to expose tradeoffs among Federal programs, and thus will play a key role in any program realignment caused by new food and nutrition programs. If Congress considers cashing out food stamps, the research question will be what impact the elimination of the purchase requirement had on the improvement of participants' diets. The utility and efficiency of in-kind nutritional benefits will continue to be questioned, and analysis should be from the perspective of interpersonal utility functions of donors and participants.

KEYWORDS: Budget process, food and nutrition policy, Congressional Budget and Impoundment Act of 1974.

INTRODUCTION

The definition and creation of a national food and nutrition policy will require an explicit rethinking and reordering of national priorities. This is especially true if it is assumed that fiscal policy goals such as reduced Federal budget deficits, reduced inflation, and increased employment are also to be achieved. As has been pointed out by Professor Timmer, achieving specific macroeconomic policies need not detract from achieving objectives of a national food and nutrition policy. "Nutrition is linked to food by consumer incomes via the same market and price mechanisms that link agriculture to the food sector" (12).¹

Changes in Federal policies related to the distribution of income (adjusted for price increases), or changes in tax policies impacting on a farm's or food processor's profits can influence nutrition objectives as much as the establishment of expanded nutrition education programs or direct feeding programs. Redistribution of income issues, how-

ever, always create problems for some economists who have been taught to believe that through hard work success will automatically follow and that maximizing profits is the elixir of all social inefficiencies.

The Federal budget is the basic planning document and tool by which these difficult policy decisions and the innumerable tradeoffs translate into the establishment of a national policy. The purpose of this article is to: (1) review the Federal budget process with particular attention to the new congressional budget making machinery, and (2) discuss how this process alters the future research agenda for evaluating various food and nutrition options.

THE FEDERAL BUDGET PROCESS

The Federal budget process has four major phases: (1) the executive branch's formulation and transmittal, (2) congressional action, (3) budget execution and control and (4) review and audit (2). While all segments of this

¹ Italicized numbers in parentheses refer to items in References at the end of this article.

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process work to establish Federal policies, I will only discuss the initial stages related to the executive branch's formulation of its proposal followed by congressional action.

FORMULATION AND TRANSMITTAL

The executive branch has recently submitted its budget request that would result in outlays totaling \$500.2 billion for the fiscal year beginning this coming October—fiscal year 1979. The day following the transmittal, work began on the fiscal year 1980 budget. Within the executive branch, agency programs are being evaluated, policy issues are being identified, budgetary projections are being developed, and long range program plans are being established. These food policy seminars serve an important function in the formulation and the eventual transmittal of a budget that will not go into effect until 20 months from now.

The President's outlay estimate of \$500.2 billion for fiscal year 1979 is broken down into broad functional categories. These functions are accounting tools which array the \$500.2 billion into 19 categories that by definition have a common end or ultimate purpose addressed to an important *national need* (table 1). For example, function 050 is "National Defense" while function 350 of the budget is "Agriculture." Under the administration's esti-

mates, agriculture would show outlays of nearly \$5.4 billion—three quarters of this for farm income stabilization programs in fiscal year 1979 (table 2).

What is not often realized by those in the agriculture profession who do not deal regularly with the budget is that the domestic feeding programs fall into the functional classification 600, entitled "Income Security." This is the largest single function of the budget—over \$160 billion—about one-third of the total. Here the Food Stamp and Child Nutrition programs are found right along with the social security program, Federal employee and retirement programs, unemployment compensation, the Aid to Families with Dependent Children (AFDC) and Supplemental Security Income (SSI) welfare programs, earned-income tax credits, and even the coal miner's black lung program (table 3).

What does this mean for food and nutrition policy-makers? It has been popular to suggest that food and nutrition policy will be shaped by the budgetary trade-offs between the producer oriented programs and the consumer-oriented programs. While domestic feeding programs make up nearly 52 percent of the U.S. Department of Agriculture's (USDA) budget (chart), they make up only about 6 percent of the income security function. The institutional structures by which the President's Office of Management and Budget (OMB) tells USDA it can increase its budget by X percent this year over last,

Table 1.—Current policy estimates and the President's budget proposals, fiscal year 1979 outlays, by function

Fuctional classi- fication	Function	Presi- dent's request	Current services	
			Congressional Budget Office	President
			<i>Billion dollars</i>	
050	National Defense	117.8	118.3	116.8
150	International Affairs	7.7	7.2	7.4
250	General Science, Space, and Technology	5.1	5.1	5.1
270	Energy	9.6	8.7	9.6
300	Natural Resources and Environment	12.2	13.2	12.2
350	Agriculture	5.4	7.0	5.4
370	Commerce and Housing Credit	3.0	3.7	3.0
400	Transportation	17.4	17.1	17.4
450	Community and Regional Development	8.7	10.1	8.7
500	Education, Training, Employment and Social Services	30.4	27.8	30.4
550	Health	49.7	47.7	49.7
600	Income Security	160.0	160.2	160.0
700	Veterans' Benefits and Services	19.3	20.7	19.3
750	Administration of Justice	4.2	4.0	4.2
800	General Government	4.3	3.9	4.3
850	General Purpose Fiscal Assistance	9.6	9.4	9.6
900	Interest	49.0	46.6	49.0
920	Allowances	2.8	1.4	2.8
950	Undistributed Offsetting Receipts	-16.0	-18.1	-16.0
	Total	500.2	494.0	492.4

Source: Congressional Budget Office. *An Analysis of the President's Budgetary Proposals for Fiscal Year 1979*. Staff working paper, Jan. 1978.

Table 2.—Agriculture (Function 350) by major program, President's budget proposal and current policy estimates, fiscal year 1979

Program		President's request	Current services	
			Congressional Budget Office	President
			<i>Million dollars</i>	
Farm income stabilization:				
Commodity Credit Corporation— price supports	BA	5,500	3,418	5,005
	O	4,276	5,322	4,258
Agricultural Credit Insurance Fund	BA	144	211	144
	O	-388	215	-188
Other farm income and offsetting receipts	BA	271	238	215
	O	286	250	224
Agricultural Research and Services	BA	1,282	1,260	1,210
	O	1,259	1,241	1,259
Total	BA	7,197	5,127	6,574
	O	5,433	7,028	5,511

BA = Budget authority.

O = Outlays.

Source: Congressional Budget Office. *An Analysis of the President's Budgetary Proposals for Fiscal Year 1979*. Staff working paper, Jan. 1978.

could result in intradepartmental trade-offs—for example, between food and nutrition programs and farmer's deficiency payments. These are not the same types of trade-offs which could be experienced when food and nutrition program requests are examined along with requests for increases in social security benefits. Such interactions and interplay of the various budget functions will influence food and nutrition policymaking, but the major budgetary tradeoffs of producer- and consumer-oriented programs will occur within USDA, not within the budget committees.

From a legislative and budgetary perspective, the establishment of a food and nutrition budget function would go a long way toward helping define a national food and nutrition policy. Currently, food- and nutrition-related programs are scattered throughout the Federal bureaucracy. This is reflected in the Federal budget, which shows spending for food- and nutrition-related programs in about half of the budget functions.

CONGRESSIONAL ACTION²

From the beginning of our Government through nearly three-quarters of the 20th century, the Congress more

²I am indebted to Alfred Fitt of the Congressional Budget Office for his suggestions and guidance in this section.

often than not engaged in particle budgeting. Annually it made spending decisions about Federal programs virtually one program at a time, without regard to what it had decided about other programs.

A *Wall Street Journal* article some years back referred to Congressman Jamie Whitten as the real Secretary of Agriculture, acknowledging the strength of the Chairman of the Agriculture Appropriation Subcommittee over policy and spending levels in USDA. His committee, as with other appropriation committees, worked on spending recommendations; another committee shaped revenue laws. Each performed its assignment without reference to what the other was doing. Historically, the strength of the appropriation process grew out of the limited restrictions (three in number) the Constitution placed on national expenditures. One of those restrictions is simply "that no money shall be drawn from the Treasury but in consequence of appropriations made by law."³ The Congress had no mechanism for examining next year's consequences of this year's decisions.

³U.S. Constitution, Article I, Section 8, cl. 12 and Section g, cl. 7. The two other restrictions imposed by the Constitution are these: (1) appropriations for the support of the Army shall not be for a longer term than 2 years and (2) a regular statement and account of the receipts and expenditures of all public money shall be published from time to time.

Table 3.—Income security (function 600) by major program, fiscal year 1979

Program		President's request	Current services	
			Congressional Budget Office	President
Million dollars				
Social Security (OASDI)	BA	101,530	102,229	101,545
	O	104,450	104,599	105,102
Federal Employee Retirement and Disability	BA	19,242	18,780	19,242
	O	12,164	12,125	12,164
Unemployment compensation	BA	17,027	14,541	17,232
	O	11,827	11,426	11,827
Food Stamps	BA	5,779	5,597	5,779
	O	5,748	5,949	5,748
Child Nutrition and other food program	BA	3,401	3,297	3,438
	O	3,528	3,627	3,548
Public Assistance (AFDC)	BA	6,846	6,445	6,823
	O	6,846	6,445	6,823
Supplemental Security Income	BA	5,715	6,069	5,715
	O	5,555	6,031	5,555
Housing assistance	BA	25,594	34,646	25,078
	O	4,410	5,121	4,275
Fuel Efficiency Tax Refund	BA	1,333	NA	NA
	O	1,333	NA	NA
Other programs	BA	4,325	4,803	4,346
	O	4,155	4,694	4,145
Total	BA	190,855	196,407	189,168
	O	160,024	160,017	159,181

BA = Budget authority.
O = Outlays.
NA = Not applicable.

Source: Congressional Budget Office. *An Analysis of the President's Budgetary Proposals for Fiscal Year 1979*. Staff working paper, Jan. 1978.

The Congressional Budget and Impoundment Act of 1974 (Public Law 93-344) was the Congress' response to the diagnosis of its own institutional failings. It established two new budget committees, one in the House and one in the Senate, each responsible for carrying out the mandates of the new act. After nearly 3 years, the Congress has proved that it can meet the taut deadlines ordered by the 1974 legislation, can fix detailed and overall targets for revenues and spending, can stay within targets or adjust them as needed, can establish an explicit fiscal policy goal, and can shape its particular decisions in the light of fiscal policy it has decided upon.

But the path has not been easy. The new process asks—indeed, insists—that members of Congress do what

few mortals like to do: confront the consequences of their choices. It puts a sharp edge on those choices, when every political instinct is to blur rather than define the edges.

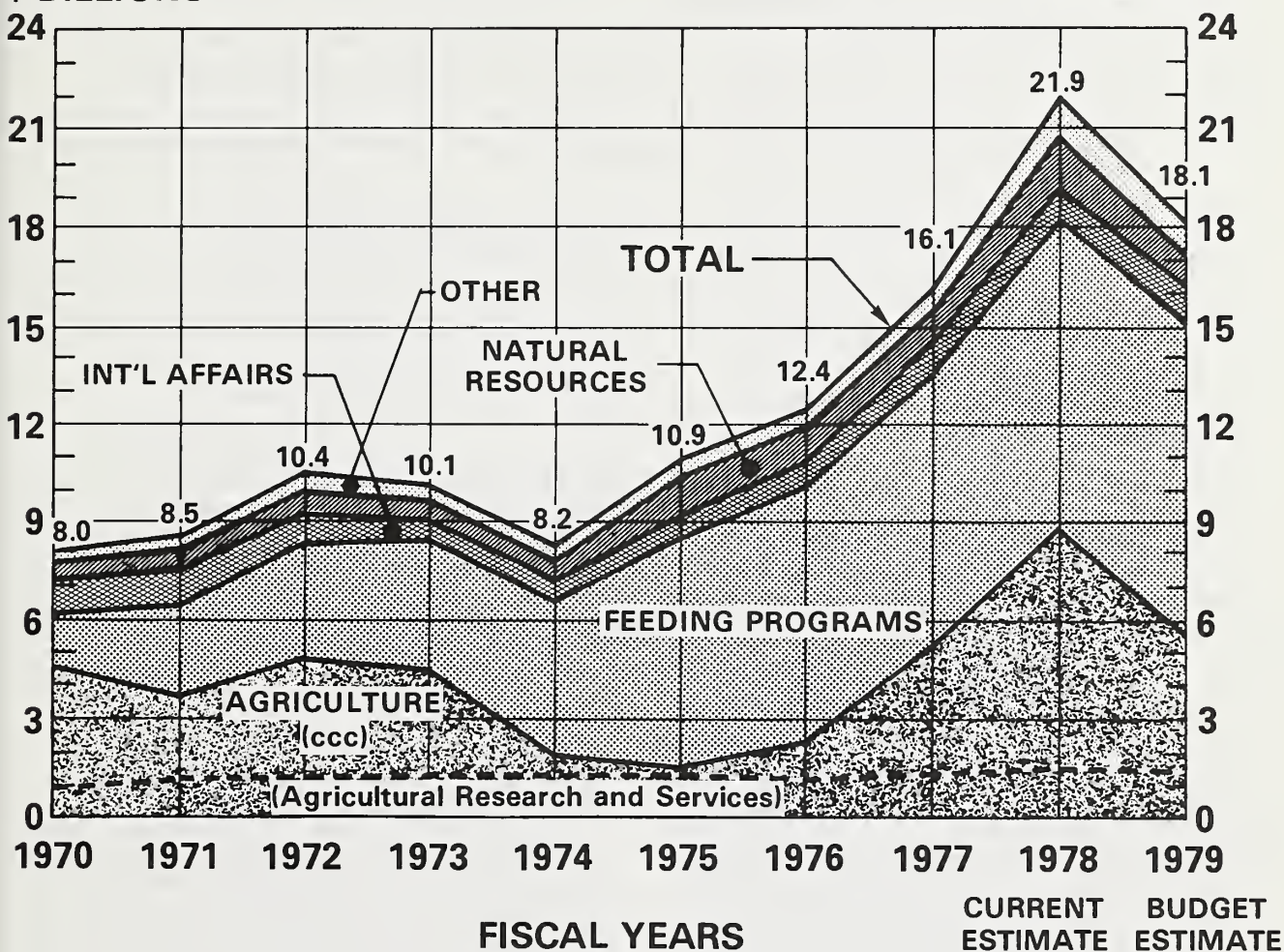
Recently along with representatives of USDA, I confronted members of the House Agriculture Committee with estimates of food stamp outlays for fiscal year 1979. The two estimates differ rather importantly, USDA's budget figure being \$5.7 billion; the Congressional Budget Office's (CBO), \$5.9 billion. Rather than decide on one figure to recommend to the House Budget Committee, the Agriculture Committee decided on a range which included the two figures. While I am as aware as anyone as to the range of error in all estimates (and I think all researchers should remind policymakers of their confidence

USDA OUTLAYS

1970-1979 (Excluding Revolving Loan Funds)

\$ BILLIONS

\$ BILLIONS



intervals) unfortunately appropriations are not granted in ranges. I am sure if allowed, many members of Congress would prefer to vote on a range for the total Federal budget. However, in forcing members to vote on the budget as a whole—one figure—the new process denies them the luxury of being for guns and against peanut butter in schools and vice versa.

An important aspect of budget reform is the calendar discipline the Congress imposed on itself (table 4). After the President transmits his budget, authorizing committees and spending committees (such as the Agriculture Committee and the Agriculture Appropriation Subcommittees) hold hearings, receive testimony and review the President's request. On March 15, these committees completed and transmitted a report to their respective budget committees with their recommendations for spending

levels as they relate to the President's request. As an example, the President asked for a reduction of \$130 million in the special milk program. The Senate Agriculture Committee and the House Education and Labor Committee asked their budget committees to restore the \$130 million.

The Budget committees will also hear testimony, consider the various committees' reports, and report out for a vote in their respective chambers by April 15 the first concurrent resolution for fiscal year 1979. Votes are cast by functional level. One month later, by May 15, the first budget resolution must be adopted by both Houses. The May budget resolution contains more than budget totals; it also fixes targets in the 19 functional categories—a certain amount for agriculture, for income security, and so forth.

Table 4.—Congressional Budget Process Timetable

Date	Action
15th day after the Congress meets	President submits his budget.
March 15	Congress and joint committees submit reports to budget committees.
April 1	Congressional Budget Office submits report to budget committees.
April 15	Budget committees report first concurrent resolution on the budget to their respective Houses.
May 15	Committees report bills and resolutions authorizing new budget authority. Congress completes action on first concurrent resolution on the budget.
7th day after Labor Day	Congress completes action on bills and resolutions providing new budget authority and new spending authority.
September 15	Congress completes action on second required concurrent resolution on the budget.
September 25	Congress completes action on reconciliation bill or resolution, or both, implementing second concurrent resolution.
October 1	Fiscal year begins.

In the summer months, bills are enacted that fund the activities of the Government for the new fiscal year. In theory, at least, the appropriation for any function could exceed the target fixed in May. However, except for the farm bill of last summer, the May targets have been treated as ceilings. One of the most significant challenges to the farm bill on the Senate floor last year came from Senator Muskie, Chairman of the Senate Budget Committee. He offered amendments to set lower wheat target prices for the 1977 crop and to cut back the loan and target levels for the 1978 and later crops. The farm bill as reported by the Senate Agriculture Committee clearly exceeded the budget targets in the first concurrent resolution. Senator Muskie's amendments were defeated, and revised figures were developed for the second budget resolution (6).

The second budget resolution—confirming or revising the figures adopted in May—must be passed by September 15. The new fiscal year then begins October 1. The second budget resolution has a more formal “bite” than the first. Subsequent spending bills that would cause the Federal outlays to exceed totals fixed in the resolution, or taxing proposals that would cut revenues below the resolution are against the rules.

The September budget resolution is not inviolate. If the economy unexpectedly changes so that the fiscal policy adopted in September is no longer appropriate, then the new process contemplates a third budget resolu-

tion—or more, if necessary—to adjust Federal fiscal policy to the new circumstances.

Contributing to the reform nature of the new budget process is the fact that proposed legislation, once reported out of committee, must be reported to the floor with 5-year cost estimates showing its impact if it were enacted. These estimates are prepared by my colleagues and myself at the Congressional Budget Office. Since the cost of a specific bill will make up only a small fraction of the functional category in which its authorization lies, one would not, at first glance, think these cost estimates would be significant. However, in a scorekeeping system at CBO all bills are tallied by functional category, and the budget staff (much to the chagrin of the staff and chairman of the authorizing and spending committees) is familiar with many of the line-item assumptions used to develop the functional totals. This system and staff knowledge makes each bill's cost estimate an important factor in whether it is challenged in the Congress as “busting” (sic) the budget.

CBO does more than price out bills. It serves as the legislative branch counterpart to the President's Council of Economic Advisers, providing periodic and independent economic forecasts, and as the analytical arm of the Congress in budget matters. For many years, OMB has developed budget options for the White House, and the budget message transmitted each January reflected a host of Presidential choices from among those options. Until CBO

was created, the Congress had no means of its own to describe and array in any organized sense the sets of options from which the President's budget recommendations were developed, nor any means to secure its own analysis of budget alternatives. CBO now provides such a means.

IMPACT OF BUDGET PROCESS ON FOOD AND NUTRITION RESEARCH

The logical question now would be—so what? How does any of this affect me, or affect the development of a national food and nutrition policy?

Washington is a city of power struggles. Less than 5 years ago, the Congress was the “sick man” of the Federal Government. For over 40 years, power had shifted down Pennsylvania Avenue to the White House; the movement accelerated rapidly under former President Nixon, who essentially operated on his own in making budgets.

Now there is undeniably a feeling on Capitol Hill that somehow the legislative branch is on the way to establishing the Federal agenda instead of merely reacting in comparatively minor ways to a stronger executive branch. The balance has been restored, and perhaps even swung in the opposite direction. Since I am the first, last, and only congressional staffer to speak at these seminars, I guess some people at USDA would question my judgment as to the role of the Congress in this area. I nevertheless feel that the establishment of a food and nutrition policy will be shaped equally, as well as concurrently, by both the Congress and the executive branch.

THE EXPANSIONARY RESEARCH AGENDA

My own view is that the current congressional budget reform is a remarkable and major improvement over the old way of doing business. It is far better to fix fiscal policy by choice rather than chance. Legislation decisions on the funding of new human nutrition research or the introduction of other food and nutrition programs will be better for having been made in the light of alternatives and future costs. I believe that the new process will require, in fact demand, a broader perspective of the relationship between agriculture, food, and nutrition. It will move policymaking in the direction of Kenneth Farrell's more holistic, integral view of agriculture and public policy (3).

In this respect I disagree with Ken Robinson's statements before an earlier seminar, that the real impact on food and nutrition policy will continue to come from the traditional farm policymaking machinery (11). The new budget process does not allow the old machinery to be so dominant. Food and nutrition policy will be a subset of a broader social welfare policy agenda that will attempt to address needed social reform with limited resources. Tradeoffs of program goals and objectives will clearly be required, and *no* adversary, parochial interests can exist between the U.S. Departments of Health, Education, and Welfare; Treasury; Justice; and Agriculture—when so much is at stake.

This new institutional arrangement will require broader research, of the sort that economists have been reluctant to engage in the past. Paraphrasing words of my current boss (Alice M. Rivlin), agricultural economists will have to put themselves back into the theoretical-philosophical discussions of how food (income) ought to be distributed. We will have to abandon the notion that interpersonal comparisons of utility are not possible and we will have to quit rejecting the commonsense assertion that taking food (income) away from a glutton (rich man) and giving it to a hungry (poor) man generally enhances the total nutrition (welfare) of the society (10).

Because of the new budget process demand to view programs and policies synergistically, greater demands will be put on researchers to develop microsimulation approaches to food and nutrition options. Policymakers will ask specific questions directed at the decisionmaking unit—the family or person level.

Questions will be raised as to the interactions of a number of social welfare programs and their combined effects on behavior and consumption patterns. Not—how does a change in the food stamp law affect current food stamp recipients—but more, how do changes in social security, and Child Nutrition, and other income transfer programs affect actual and potential food stamp recipients? With all respect to Paul Nelson and John Perrin, the new process will not ask what would have happened in 1974 if we had cashed out food stamps but what will happen in 1984 (8).

The new budget process requires us to think in a dynamic as opposed to static mode. Not only how changes in the school breakfast program increase nutritional intake, but also, how they affect family life, behavior patterns, family stability, and all those other things economists are so inclined to leave to God and the sociologists. Dynamic models will be used more and more longitudinal data sets will be developed.

The budget process is moving toward the concept of multiyear budgeting. In evaluating options competing for limited resources, it will become more important to determine their long run effects on the budget. Do, for instance, increased expenditures on prenatal and postnatal nutrition programs today (such as WIC) translate into improved health and therefore increased cognitive and learning skills later, resulting in improved employment skills and less outlays for public service employment or welfare payments in the future?⁴ We all need to bring more fully into the discussion of costs of food and nutrition options the theoretical works of human capital accumulation in a lifecycle model.

This new food and nutrition research agenda will require a greater effort in outreach research. Attempts to expand food intervention programs through outreach will fail unless researchers take steps down the

⁴ See (5) for example.

"slippery path" Professor Timmer spoke about—which at the end is the most micro equity issue question with perhaps the broadest philosophical overtones. Why do people eat what they eat? The Household Food Consumption surveys should be expanded, to make them more timely, longitudinal, and able to be integrated with other large micro-data surveys (such as the monthly Current Population Surveys, the Survey of Income and Education, and U.S. Health Examination Surveys).

Food consumption and nutrition adequacy are influenced by tastes, habit, mores, and economics. These factors sometimes support one another and sometimes are in conflict. We will always have to ask very basic questions such as this. Can legislation or administrative rulings alter consumption patterns in favor of agreed-on nutrition objectives without infringing on some of the most basic human freedoms?

More importantly, from the perspective of the development of a national food and nutrition policy, can we agree on what the nutritional objectives of the country should be? As Don Paarlberg has stated:

With the ends in dispute, the economist has difficulty indicating how to marshal the means. He is like a tour director who is asked to organize a trip, the destination of which is in doubt. The economist cannot chart a course which simultaneously moves us in support of all worthy objectives (9).

Finally, under this new food and nutrition research agenda, a broad review of in-kind nutrition benefits should be undertaken. Given the propensity for most researchers—including Mr. Nathan—to argue for "cashing-out" the food stamp program "sometime" (7), I probably am still pursuing an elusive goal.

The proponents of cashing out food stamps do not usually talk about nutrition, but about all the problems of the current welfare system. No effective national evaluation has been made of the impact the program has had on the nutritional well-being of its target population. The Congress will not cash out food stamps for some time. Even if the administration's welfare reform proposal were to pass, 1981 would be the earliest before food stamps would depart from the scene. In fact, other welfare reform proposals, such as the one introduced by Congressman Ullman (H.R. 10711), expand the targeted consumption role of food stamps for low-income families.

Unless new evidence is forthcoming, I think the Congress will seriously consider cashing out food stamps, and incorporating the benefits into expanded AFDC-unemployed fathers program, maybe at the time of the current program's reauthorization in fiscal year 1982. At the time, the question before us will be what impact the

elimination of the purchase requirement had on the improvement of participants' diets? After all, in some circles, this was one of the major selling factors for the proposal. Will you be prepared to answer?

Research groups within the executive branch, USDA and university organizations should begin immediately to plan a comprehensive study. Time appears to be on your side; regulations for the new program are yet to be published. I believe this should not be a simple 24-hour dietary recall study. It should be broad and national, performed by an interdisciplinary team of nutritionists, members of the medical profession, and economists.

Whether or not food stamps are "cashed out," policymakers—prodded by the economics profession—will continue to raise the question as to the utility and efficiency of in-kind (nutritional) benefits. All in-kind benefits should be analyzed from the perspective of the interpersonal utility functions of donors and recipients (4, 1). Most past studies have looked only at the utility of the recipients. While cash out would maximize the recipient's total utility, what happens to that of the taxpayer? I believe the taxpayers' attitudes toward assistance are best described by the familiar proverb: "Give a person a fish and he has food for one meal; teach him to fish and he can get food for a lifetime." While self-help educational programs are probably better than in-kind assistance programs, it is giving the person the money to buy the fish that bothers a number of taxpayers.

The elimination of food stamps would be only the beginning of a series of issues which could lead toward the elimination of most child nutrition programs and the provision of block grant monies to States and localities. Such a move could result in such programs losing their identity and becoming an integral part of the broader Federal, State, and local school financing system.

CONCLUSION

While I cannot pretend that an expanded food and nutrition research agenda is the sole result of the new budget process, I do believe the process has had some small impact. In truth, it probably simply reflects a more general attitude prevalent throughout the country, one of accountability. Government programs (including a number on nutrition intervention) have expanded rapidly since the late sixties, and people want to know the dividends from these investments. New and needed food and nutrition programs will have a harder time winning funding support in the years to come. This fact will challenge researchers and food policymakers to outline carefully food and nutrition objectives and alternative mechanisms for reaching them.

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